



Final Environmental Impact Statement

*Presidio Trust Management Plan
Land Use Policies for Area B of the Presidio of San Francisco*

Volume I

MAY 2002

As part of the Golden Gate National Recreation Area, the Presidio's significant natural, historic, scenic, cultural and recreational resources must be managed in a manner which is consistent with sound principles of land use planning and management, and which protects the Presidio from development and uses which would destroy the scenic beauty and historic and natural character of the area and cultural and recreational resources.

- From the Presidio Trust Act (P.L. 104-333).

PRESIDIO TRUST MANAGEMENT PLAN (PTMP): LAND USE POLICIES FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO FINAL ENVIRONMENTAL IMPACT STATEMENT

San Francisco, California

The Presidio Trust Management Plan (PTMP) Final Environmental Impact Statement (EIS) is comprised of three volumes, each bound under separate cover: the EIS (Volume I), Responses to Comments (Volume II), and the Appendices (Volume III). This is Volume I (see below for contents of all three volumes). The Presidio Trust is the Lead Agency and project proponent. This Final EIS and corresponding Final Plan (PTMP) represent the culmination of a two-year public planning and environmental review process.

This Final EIS describes and analyzes alternatives to update the General Management Plan Amendment (GMPA) adopted in 1994 by the National Park Service (NPS) for the area of the Presidio of San Francisco now under the jurisdiction of the Presidio Trust (Area B). The proposed action (Final Plan) and five additional alternatives have been assessed along with a variant of the Final Plan Alternative developed in response to public comment on the Draft Plan and Draft EIS.

Under the 1996 Trust Act, as amended, Congress created the Trust to preserve and enhance the cultural, natural, scenic, and recreational resources of the Presidio for public use while ensuring that the park becomes financially self-sufficient with respect to both annual operations and long-term needs. Each of the alternatives presented in this EIS achieves this differently and has a

different emphasis. Principal differences include the proposed total building square footage, the proposed amount of non-residential and residential uses, the amount of open space and the method of delivery of public programs. The maximum overall square footage of 5,960,000 allowed under the Trust Act would not be exceeded under any alternative.

Major impact topics assessed in this EIS include historic resources, cultural landscape, archaeology, biological resources, water resources, visual resources, air quality, noise, land use, socioeconomic issues, visitor experience, recreation, public safety, transportation, water supply, utilities, and Trust operations. Mitigation measures are included to reduce impacts identified in many of these topic areas.

No decision on the Final Plan will be made or recorded until at least 30 days after the publication of notice by the U.S. Environmental Protection Agency (EPA) in the Federal Register that this Final EIS has been filed with the EPA. For further information about this document or the NEPA process, please contact the Trust in writing at 34 Graham Street, San Francisco, CA 94129 or by telephone at 415/561-5300. Copies of all three volumes of the Final EIS and the Final Plan are available at the Trust Library (34 Graham Street), on the Trust website at www.presidiotrust.gov and in local libraries.

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INTRODUCTION

INTRODUCTION

This is Volume I of the Final Environmental Impact Statement (Final EIS) regarding the proposed management plan for areas of the Presidio of San Francisco (Presidio) under Presidio Trust (Trust) jurisdiction. The Final EIS supplements the Final General Management Plan Amendment Environmental Impact Statement (GMPA EIS) adopted in 1994 by the National Park Service (NPS) for the Presidio. The Final EIS is prepared in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) implementing regulations at 40 CFR Parts 1500-1508, and the Trust's own supplemental implementing regulations in 36 CFR Part 1010. Volume II contains a summary of the public and agency comments received on the Draft EIS, along with written responses to those comments. Volume III contains technical appendices related to and supplementing the Final EIS analyses in Volume I.

The Draft Presidio Trust Implementation Plan (Draft Plan or PTIP) and Draft EIS were circulated for public and agency review from July 25, 2001 to October 25, 2001, a period of 90 days. During this period, the Trust received over 3,000 comment letters, as well as oral comments provided at two public hearings, and at a public meeting of the Golden Gate National Recreation Area (GGNRA) Citizens' Advisory Commission. Original comment letters and transcripts are available for review at the Presidio Trust library, 34 Graham Street, in the Presidio.

The Trust carefully considered public comments, and made modifications to the text of the Draft Plan and Draft EIS as a result of those comments. Modifications included re-naming and revising elements of the Draft Plan, inclusion of a variant of that plan in the Final EIS and other modest adjustments to the text and analysis of the Final EIS. These changes are summarized in this introduction and explained further within the responses to comments included in Volume II of the Final EIS.

Following distribution of the Final EIS, and following the 30-day "no action" period required under NEPA, the Trust Board of Directors will consider adoption of a final plan. The Board's action could include, but is not limited to, adoption of the preferred alternative (the Final Plan), rejection of all alternatives, and/or partial or conditional approval of a particular alternative.

The Board's action, through a Record of Decision, will describe the scope and basis of the decision, the mitigations or conditions upon which it is contingent, and how the Final EIS will be used in subsequent decision making.

What follows is a summary of changes to the Plan itself (Section 1.1), followed by a summary of changes made in the Final EIS in response to public and agency comments on the Draft EIS (Section 1.2).

CHANGES TO THE PLAN

In response to public input, the Trust's preferred plan (Final Plan or Plan) has been renamed and reorganized. Now titled The Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco, the revised document more clearly articulates its intended role as a general planning or policy framework that will be used to guide future, more specific planning and implementation decisions. Two salient facts must be borne in mind in reviewing and evaluating the Final Plan: (1) it will reduce development – shown as the square footage of buildings – to significantly less than the status quo; and (2) it will increase open space to substantially more than the status quo. Thus, the Final Plan removes development rather than fostering it. Changes in the Final Plan are summarized below.

VISION AND PLAN ORGANIZATION

The Final Plan document has been reorganized and many sections rewritten to provide greater clarity. Preservation of the Presidio's cultural, natural, scenic and recreational resources for public use is articulated clearly as the cornerstone of the Plan, and therefore its "vision." The preface, vision statement, summary, and introduction section of the Draft Plan have been combined and shortened into the "Overview" of the Final Plan.

Planning principles presented in Chapter 2 of the Draft Plan have been retained in what is now Chapter One of the Final Plan, or included within the land use, transportation, and infrastructure discussions in Chapter Two. The discussion of park programs originally presented in Chapter 3 of the Draft Plan has been modified in response to comments and is now within the

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discussion of bringing people to the park in Chapter One of the Final Plan and the discussion of public land uses in Chapter Two of the Final Plan. Planning guidelines originally in Chapter 4 of the Draft Plan remain essentially unchanged in Chapter Three of the Final Plan. Implementation strategies originally in Chapter 5 of the Draft Plan have been updated and clarified in what is now Chapter Four of the Final Plan, which now more clearly articulates procedures for ensuring public input regarding future planning and decision making.

Draft Plan (PTIP) Section	Location In Final Plan (PTMP)
Executive Summary, Vision Statement, Plan Summary, Chapter 1 – Introduction	Overview, Appendix B (Plan Background)
Chapter 2 – Planning Principles	Chapter One: Preserving and Enhancing Park Resources; Chapter Two: Park Land Uses, Transportation, and Infrastructure
Chapter 3 – Programs	Chapter One (“Bringing People to the Park” section); Chapter Two – (public use discussion)
Chapter 4 – Planning Districts: Concepts & Guidelines	Chapter Three – Planning Districts: Concepts and Guidelines
Chapter 5 – Implementation Strategy	Chapter Four – Plan Implementation

CULTURAL AND NATURAL RESOURCES

The Trust’s commitment to preserve the Presidio National Historic Landmark District (NHLD or NHL District) has been strengthened in the Final Plan, and cultural resources have new prominence at the start of Chapter One. The text has also been modified to reflect execution of a Programmatic Agreement (PA) regarding compliance with the National Historic Preservation Act (NHPA). This agreement was signed in early 2002 by the Trust, the NPS, the California State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (AChP), and two non-profit historic preservation organizations. A copy of the PA is included in Volume III of the Final EIS, Appendix D.

The Final Plan also discusses an agreement between the Trust, the NPS, and the Golden Gate National Parks Association (GGNPA) to study potential

expansion of Crissy Marsh, and contains commitments that will avoid foreclosing potential expansion options for the duration of the study. Restoration of the Tennessee Hollow riparian corridor remains a clear focus of the Plan’s natural resources goals, and changes in land use or open space designations have been made to articulate the goal of restoring native plant communities immediately behind the Public Health Service Hospital (PHSH) and in the portion of the West Washington neighborhood where housing is proposed for removal.

HOUSING AND LODGING

In response to comments requesting greater specificity with regard to housing and lodging, the discussions of these issues have been clarified and additional detail provided. A map and numeric summary articulates where the Final Plan expects housing to be retained or removed, and instances where it may be converted to other uses or replaced. Where the precise number of residential accommodations provided in an area or provided via one means of replacement versus another cannot be determined with specificity, a generalized range is articulated. Quantitative, qualitative, and procedural constraints are provided for new residential construction, and the “no net loss” of housing policy described in the Draft Plan has been moderated along the lines suggested by several commentors such that the existing number of residential accommodations represents the maximum limit and not a goal.

A map in the Final Plan also shows preferred locations for lodging, and the text clarifies the Trust’s intention to reuse and rehabilitate historic buildings to provide lodging. The Plan clarifies that new construction associated with lodging will take the form of building additions or annexes that make the associated reuse of historic buildings functionally and financially feasible. In response to public comments, the maximum amount of potential new construction in the Crissy Field (Area B) planning district has been reduced from the number proposed in the Draft Plan.

BUILT SPACE AND NEW CONSTRUCTION

The Final Plan’s square footage reduction goal has been revised to be a commitment to reduce existing built space from 5.96 million square feet to 5.6 million square feet or less over time. The role of new construction was also

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clarified in the Final Plan to state that non-residential construction would be primarily used to facilitate the effective rehabilitation and reuse of historic buildings, with limited additional replacement construction to be used to meet other Plan goals.

CULTURAL AND EDUCATIONAL PROGRAMS

The Trust's commitment to high quality programming for park visitors remains in place, and is articulated in Chapter One of the Final Plan. Chapter Two of the Final Plan breaks out the discussion of cultural programs from educational uses to provide greater specifics than were available in the Draft Plan regarding the use of building space for public uses. Clarification is also provided regarding the delivery of programs. The Plan's goal is to facilitate delivery of high quality programs by the NPS, the Trust, tenants, and other partners with expertise in program delivery. In response to comments, the Draft Plan's assumption of \$10 million annually to park programming has been reduced to a more modest goal (\$2 million, increasing to \$5 million over time), and the related goal of attracting funding for programs from philanthropic and other outside sources is clearly articulated.

FUTURE PLANNING AND DECISION MAKING

In response to general confusion expressed in comments regarding the role of additional planning and public input in future Trust decisions, the Final Plan clarifies these issues. Chapter Four of the Final Plan summarizes previous and ongoing implementation actions, and provides specific examples regarding the near-term planning and implementation activities that the Trust expects to undertake once the Final Plan is adopted. Because implementation activities that will be undertaken many years from now cannot be described in any detail, a generalized implementation timeline is provided, along with a discussion of overall priorities and strategy.

Before many future implementation activities are undertaken, they will often involve additional planning, environmental analysis, and public input. The nature of additional process is identified for specific classes of activities. For example, the Final Plan specifies that all new construction – beyond minor building additions – will require public input and agency consultation pursuant to NEPA and the NHPA, and summarizes what that will involve.

CHANGES TO THE EIS

In response to public comment and changes made to the Final Plan, the Final EIS was also revised as summarized below.

ALTERNATIVES

The Final Plan alternative has been modified to reflect changes from the Draft Plan, including the reallocation of some potential new building square footage from Crissy Field (Area B) to the Letterman district, and the re-designation of certain areas for restoration as native plant communities in the South Hills district. Land use assumptions have also been revised to reflect the potential location of infrastructure (e.g., a recycled water plant) in the Letterman district, and the potential location of Golden Gate Bridge maintenance facilities in the Fort Scott district.

At the request of commentors who suggested that a variety of new alternatives be analyzed, the responses to comments clarify the spectrum of alternatives captured within the range included in the Draft EIS, and the Final EIS incorporates a variant to the Final Plan Alternative. Designed to be as consistent as possible with a detailed Sierra Club proposal, the Final Plan Variant is more aggressive than the Final Plan Alternative with respect to building demolition, emphasizes the replacement of removed housing units within existing buildings, and provides for no new construction (i.e., none of the removed building space can be replaced).

A few land use assumptions associated with the No Action Alternative (GMPA 2000) have been corrected to reflect cultural/educational rather than office use of about 220,000 square feet in the Main Post planning district, reflecting the 1994 GMPA's identification of the Montgomery Street Barracks as the location of these kinds of uses.

ANALYSIS METHODOLOGIES AND ENVIRONMENTAL CONSEQUENCES

Analysis methodologies associated with the assessment of parking demand, visitation, and utilities were revised to provide more reasonable predictions of future conditions. In response to comments on parking issues, the Trust re-

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evaluated and modified methodology related to calculation of parking demand and adjusted proposed parking supply for all alternatives but Minimum Management. Specifically, assumptions associated with the Letterman Digital Arts Center (LDAC) project were revised to be consistent with the Letterman Complex Final EIS, adjustments were made to better reflect average demand for each planning district, and the demand associated with new residential units was adjusted downward to reflect the smaller size of future units. Other parts of the transportation analysis were also updated to use assumptions consistent with the Letterman Complex Final EIS, and to incorporate the minor adjustments in land use assumptions described above. The results of the transportation analysis were then used to inform adjustments to the air quality and noise environmental impacts analyses. These EIS sections were also modified in response to comments to include carbon monoxide modeling of an additional traffic intersection, and to provide additional background information on the Clean Air Act and noise sensitive areas. None of the changes provided significant new information, resulted in significant new impacts, or substantially increased the severity of an impact that was already identified in the Draft EIS.

The same is true with regard to changes in the visitation and utilities analyses in the Final EIS. In response to public comment, the proposed “cultural/educational” uses were separated and the visitor methodology updated as described in Response VE-1 and Section 4.4.4 of the Final EIS. In estimating visitorship, further clarity was provided by reporting park visitors, instead of all “visitor trips,” which include those associated with residences and office uses. In the utilities analysis, clarifications made in response to public requests include an expanded discussion of projected water demand and supply and additional quantification of effects related to wastewater. The analysis in Section 4.2.1, (Historic Architectural Resources and the Cultural Landscape), was also expanded in response to public comment.

FINANCIAL ANALYSIS

The financial appendix presented in the Draft EIS has been updated and expanded to include a number of sensitivity analyses. The updates reflect factual information that has become known or final since the distribution of the Draft EIS, including terms of the agreement with Letterman Digital Arts,

Ltd., and Fiscal Year 2001 and 2002 budget figures (expenses and projected revenues). Updates also address changes to the alternatives made in response to comments and extension of the financial planning model from 20 years to 30 years to incorporate the financial implications associated with removal of Wherry Housing over that time frame. The changes related to alternatives included assessment of the Final Plan Variant and modification of assumptions regarding program expenses. In the updated analysis, the program expense assumption for each alternative has been modified to increase gradually from \$2 million up to the assumed goal for each alternative (e.g., \$5 million for the Final Plan Alternative), rather than assuming an immediate increase in early years. These changes are explained in more detail in Volume III of the Final EIS, Appendix K.

The financial analysis was also expanded to include a number of new sensitivity analyses associated with the No Action Alternative (GMPA 2000), the Final Plan Alternative and Final Plan Variant, and the Cultural Destination Alternative. These alternatives were selected for the sensitivity analyses because they together represent the outer bounds of the full range of alternatives plus a mid-range alternative in terms of overall square footage, capital and operating expenses and other issues. The sensitivity analyses provide information that was required to respond to comments, assessing the financial performance of the alternatives when certain assumptions are changed, such as the level of operating expenses. The new sensitivity analyses complement the one associated with declining rents described in Draft EIS (Appendix J) and are presented in their totality in Appendix K of the Final EIS. The sensitivity analyses demonstrate the limitations of any long-term financial forecast, indicating widely divergent outcomes when analysis assumptions are modified. These limitations are clarified in the text of the analysis.

The land use assumptions tables in the financial analysis have also been clarified. One table now summarizes land use assumptions for each planning district in every alternative. These assumptions are also presented in the environmental consequences (land use) section of the EIS, and form the basis of all EIS impact analyses. Another table summarizes the amount of potential new construction assumed in each planning district in each alternative. The data for the Final Plan Alternative are consistent with quantitative limits set

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forth in the Plan document, and represents the maximum potential rather than proposed amount of new construction. Finally, the table summarizing the residential program for all alternatives has been revised to clarify assumptions regarding the number of units removed (whether through demolition or conversion) and the number replaced (whether within existing buildings or new construction). The housing goals in the Final Plan fall within the assumptions previously embedded in the Draft EIS analysis and carried forward in the Final EIS.

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SUMMARY

SUMMARY

The Presidio Trust is proposing to update portions of the *1994 Presidio General Management Plan Amendment (GMPA)* completed by the National Park Service (NPS) in 1994. The proposed update is for the areas of the Presidio of San Francisco that were transferred to the Trust's jurisdiction (Area B) by Congress under the 1996 Presidio Trust Act (Trust Act). This Final Environmental Impact Statement (EIS) is accompanied by a Final Plan document entitled *Presidio Trust Management Plan; Land Use Policies for Area B of the Presidio of San Francisco* (PTMP). Together these documents supplement the 1994 GMPA and GMPA EIS, and are tiered from the latter document as well as from the EIS prepared by the Trust for the Letterman Complex. The plan update and supplemental EIS are necessary to reflect the change in administrative jurisdiction of Area B and other substantive changes occurring since 1994, as explained later in this Chapter.

The EIS evaluates the effects of six alternatives, and one variation of the Final Plan Alternative, for the proposed PTMP.

A brief discussion of the following topics is provided in this chapter:

- The Presidio and its Planning Context
- Scope and Type of EIS
- Purpose and Need for this Project
- Changes Between Draft & Final
- Summary of Alternatives Evaluated
- Major Conclusions in the EIS
- Issues to be Resolved

For additional detail on any of these subjects, the reader is referred to relevant chapters within the EIS.

THE PRESIDIO AND ITS PLANNING CONTEXT

The 1,490-acre Presidio of San Francisco is one of the country's great natural and historic sites. It possesses an extraordinary combination of natural beauty, ecological diversity, and historical significance. A military garrison for over 220 years, operating under three different flags, the Presidio is a

National Historic Landmark District (NHL) within the Golden Gate National Recreation Area (GGNRA) an extensive national park of more than 70,000 acres that begins where the Pacific Ocean meets the San Francisco Bay.

The Presidio's transition from military post to national park began in 1972, when Congress authorized the formation of the GGNRA. In the legislation that established the GGNRA (the GGNRA Act), Congress mandated that the Presidio would become part of the GGNRA if the Department of Defense ever declared the base to be in excess of its needs. The Presidio was designated for closure on the 1989 Base Closure and Realignment Act list and, in 1994, it was transferred to the NPS.

Following the establishment of the GGNRA in 1972, the NPS prepared and approved in 1980 a General Management Plan/Environmental Analysis (GMP) – a programmatic document that set forth the basic management philosophy for the entire national recreation area and Point Reyes National Seashore. In response to the 1989 Presidio closure announcement and pending transfer, the NPS initiated a supplemental public planning and environmental review effort to update the 1980 GMP with specific management and land use actions for the Presidio. The result of this effort was the final GMPA and corresponding EIS. The GMPA was approved by the NPS in July 1994. While the GMPA laid out specific land use plans for 13 distinct planning districts to guide visitor use, cultural and natural resource management, development and operation of the Presidio, it also assumed that more detailed site-specific plans/designs with supplemental environmental analysis would be needed during GMPA implementation.

Once the GMPA was in place, difficult questions regarding its implementation were raised. The challenges included the innovative approaches and unique authorities that would be needed to manage the transformation (i.e., building leasing, property management, and real estate finance), and the high operating and projected capital costs (\$40 million annually and \$490-\$741 million, respectively) that would be necessary to implement the GMPA. Congress was unwilling to commit the federal monies needed over the long-term to improve, protect, and maintain the Presidio, and instead created the Presidio Trust (Trust) with a mandate to generate the monies needed to meet these specific challenges.

SUMMARY

Two years after the GMPA was adopted by the NPS, Congress adopted the Presidio Trust Act, establishing The Trust as a wholly-owned federal government corporation to transform the military post into a financially self-sufficient park by the year 2013 and to simultaneously protect and preserve its natural, historic, scenic, and cultural and recreational resources. Congress divided the Presidio into two areas: Areas A and B. Area A, which encompasses the coastal areas and Building 102 (about 20 percent of the Presidio), remained under NPS jurisdiction. On July 1, 1998, jurisdiction and management of the non-coastal areas (Area B) of the Presidio was transferred from the NPS to the Trust, which now manages the property in a manner that is consistent with the Trust Act, the purposes of the GGNRA Act and the general objectives of the GMPA.

Although still within the GGNRA, many of the Trust Act requirements for management of Area B differ significantly from those the NPS must meet in managing property under its administrative jurisdiction. These differences prompted the Trust to reexamine the existing land use plan (i.e., the GMPA) for Area B within the context of the Trust's mandate as well as other substantive changes that have occurred at the Presidio since the GMPA was adopted in 1994. The Trust, in consultation with the public and other agencies, determined that the best way to facilitate this needed review and update would be through a public planning and environmental review process. This EIS, and the accompanying Final Plan (incorporated herein by reference), as well as public and agency comments on the Draft EIS and Draft Plan, encompass the results of that effort.

SCOPE AND TYPE OF ENVIRONMENTAL IMPACT STATEMENT

In accordance with 40 CFR 1502.4, this EIS supplements the GMPA EIS and considers the environmental effects of the proposed changes to the GMPA that would occur under each alternative. The EIS is a broad, program-level document that evaluates overall concepts for change, including principles governing the care and management of its varied resources, preferred land uses and programs and activities appropriate in this national park setting. In total, six alternatives and one variation of the Final Plan Alternative (Final Plan Variant) are evaluated in this EIS.

More detailed and site-specific plans will be developed in the future based on the direction established in the selected alternative. In response to public comment on the Draft Plan and Draft EIS, the Trust has incorporated more specificity regarding these future planning efforts into Chapter 4 of the Final Plan. Future activities would be subject to NEPA and National Historic Preservation Act (NHPA) review, involve coordination with the NPS and other agencies as necessary, and provide opportunities for additional public participation. In accordance with 40 CFR Section 1502.20, where appropriate, the Trust may tier future projects from this EIS. (For additional information on future planning/review activities, also refer to "Type and Scope of EIS" section in Chapter 1 of this EIS, and Chapter 4 in the Final Plan.)

The scope of this EIS was developed based on input received during a 6-month public scoping period, and through the use of the Environmental Screening Form (see Appendix A) which tiers from the GMPA EIS. Additional public input on the contents of the EIS was provided during the 90-day review period for the Draft EIS. Consistent with 40 CFR 1501.7, the scope of the EIS is focused on issues that are significant or that have not been covered by a prior environmental review. Table S-1 presents a summary of the environmental consequences and mitigation measures presented in Chapter 4 of this EIS.

UNDERLYING PURPOSE AND NEED

The Trust is required by the Trust Act to manage Area B of the Presidio to ensure resource preservation while at the same time ensuring that it become financially self-sufficient with respect to both annual operations and long-term needs. If the Trust fails to meet this financial mandate, the Presidio will be transferred to the General Services Administration (GSA) to be disposed of as federal property and deleted from the boundaries of the GGNRA.

The purpose of the proposed plan update is to provide a land use policy framework to guide the Trust's successful implementation of the Trust Act by updating the management concepts and land use proposals for Area B identified in the 1994 GMPA. The plan update must address a variety of issues including the new Trust Act requirements, changes occurring since the GMPA was approved, and new policies and management approaches. A brief

discussion of each is provided below, followed by an overview of the project objectives. For more depth, please refer to Chapter 1 (Purpose & Need).

Trust Act Requirements: The Trust must manage Area B of the Presidio in a manner that is consistent with the purposes of the GGNRA Act and the general objectives of the GMPA, while at the same time meeting the financial mandate outlined in the Trust Act. Beginning no later than Fiscal Year 2013, the Trust must generate sufficient revenues from Area B to support its operations without annual federal appropriations. Thereafter the Trust must also generate sufficient revenues to sustain park resources and operations in perpetuity, which include performing the necessary building, natural resources and infrastructure-related capital improvements and funding replacement reserves.

In addition, the Trust Act requires consideration of a number of other factors that the GMPA did not. Removal and/or replacement of some structures must be considered as a management option in administering Area B. In managing and leasing properties, the Trust must give priority to those tenants that enhance the financial viability of the Presidio and facilitate the cost-effective reuse of historic buildings. Other requirements include obtaining reasonable competition in leasing, considering the extent to which prospective tenants contribute to the reduction in cost to the federal government, and bringing all Area B properties into compliance with federal building codes and regulations. All of these requirements are to be accomplished while managing the Presidio so as to protect it from “development and uses which would destroy the scenic beauty and historic natural character of the area and cultural and recreational resources.” The plan update is needed therefore, not only to carry out the new financial requirements, but also to balance management and leasing activities with the resource protection mandate of the Trust Act.

Changed Conditions: Examples of changes occurring since 1994 include progress made toward implementation of the GMPA, changes in the financial assumptions of the GMPA (i.e., Congress’ rejection of the GMPA’s fundamental assumption regarding federal appropriations for the Presidio), and the departure of the Sixth U.S. Army, which had been expected to occupy approximately 30 percent of the Presidio’s building space for an indefinite period. Other land use concepts presumed in the GMPA have also not been supported by existing conditions or market demand. Changes include failure of the lease negotiations with the University of California at San Francisco

(UCSF) at the Letterman complex, and subsequent selection of an alternate user for the site. These and other changes explained in the Purpose and Need Chapter demonstrate the need for a more flexible plan – one that does not require a plan amendment each time a condition (i.e., the market or a land use designation or building treatment proposed under the GMPA) changes.

New Policies and Management Approaches: Because the Trust’s mandate must be met largely without federal funding there is a greater need for Area B management and planning policies to consider market principles, financial uncertainties, and changing economic conditions. The Trust needs the flexibility of a programmatic, rather than prescriptive plan to respond to market factors like these. At the same time, the financial requirements of the Trust Act and the Trust’s financial management policies and approaches must be balanced against its resource protection requirements, including consistency with the purposes of the GGNRA Act and the general objectives of the GMPA. The plan is needed to provide flexibility while ensuring that an overarching policy framework is established for Area B to guide future activities in a manner that is consistent with the Presidio’s national park status.

PROJECT OBJECTIVES

The goal of this project is to develop, adopt, and implement a plan that meets the following basic objectives to the fullest extent possible.

- Consistency with Trust Act resource mandates (including consistency with the purposes of the GGNRA Act and the general objectives of the GMPA)
- Consistency with Trust Act financial mandates (including achieving financial self-sufficiency by year 2013 and long-term financial sustainability)
- Flexibility to respond to market changes and opportunities (to ensure the Trust is successful in meeting its legislated mandates)
- Consistency with PTMP Planning Principles and District Guidelines
- Clear relationship with existing plans and consideration of public input
- Housing balance (address the demand for housing by park-based employees)
- Desired tenants (tenants that would further the multiple program and financial goals of the Presidio)

SUMMARY

- Programs and public uses (expansion)
- Historic compliance (protection of the NHLD)
- Environmental sustainability

ALTERNATIVES

The starting point for the development of all alternatives evaluated in this EIS was the 1994 GMPA and EIS. This EIS analyzes the continued implementation of the GMPA (as updated to current year 2000 conditions) as the no action alternative pursuant to 40 CFR 1502.14(d). With input from the public and interested groups and agencies, the Trust identified five additional alternatives for Area B which were carried forward for further analysis in this EIS. Based on comments to the Draft EIS, a variant to the Final Plan Alternative was also included.

With the exception of the Minimum Management Alternative, each alternative is designed to achieve to varying degrees the PTMP vision, Planning Principles and Planning District Guidelines (see Appendix B) and to fulfill the Presidio's purpose and mission as set forth by Congress in the Trust Act. Each alternative is an example of a possible future for the Presidio. Differences among the alternatives include proposed total square footage of building space; the proposed amount of non-residential, residential, cultural/educational, and other uses; the amount and type of open space; the level of potential demolition and possible replacement construction; retention or loss of dwelling units; and the extent of park programming and approach to achieving park programs. The alternatives evaluated in this EIS are:

- No Action Alternative (GMPA 2000)
- Final Plan Alternative (preferred alternative and proposed action) and Final Plan Variant
- Resource Consolidation Alternative
- Sustainable Community Alternative
- Cultural Destination Alternative
- Minimum Management Alternative

A brief description of the alternatives is provided below. See Chapter 2 for a more in depth description of the alternatives.

General Management Plan Amendment (GMPA) 2000 Alternative

This alternative would implement the 1994 GMPA for the Presidio assuming current (year 2000) conditions. Tenants and residents would work together to create a global center dedicated to addressing the world's critical environmental, social, and cultural challenges. Cultural and natural resources throughout the Presidio would be protected and enhanced and new programs would be established through public/private partnerships. Historic buildings and landscapes that distinguish the NHLD would be rehabilitated and adaptively reused. Buildings would be removed to increase open space and/or enhance recreational, cultural, and natural resources, and total built space would be reduced from 5.96 million square feet (sf) to 5.01 million sf.

The housing supply would be substantially reduced and remaining units would be used by park center employees, program participants and visitors. Some would be converted to lodging and overnight accommodations. The historic forest, streambed and riparian corridors, native plant communities, and recreational opportunities would be protected, improved, and expanded in some instances. A variety of improvements would be implemented to make the Presidio easy to reach, explore, and enjoy. The Presidio would become a model of environmental protection and sustainable design and a "global center" for people to come together to address the world's most critical problems. Tenants with an organizational mission focused on environmental and social sustainability or skills in education and science, innovative technologies, and problem solving would be selected to lease buildings, and develop and operate programs at the site. Park partners would offer a wide range of programs to inform visitors about the Presidio's resources, discuss global concerns, celebrate cultural diversity, and educate the public on environmental issues. The Trust and NPS would cooperate to provide a base level of interpretive services and education about the Presidio's history and significant resources. Land uses and description of building use preferences are shown in Figures 3 and 4 in Chapter 2 (Alternatives).

Final Plan Alternative

This alternative was developed in response to public comments during the scoping process for this EIS, and further refined in response to public and

agency comments on the Draft EIS and Draft Plan. The alternative is patterned on the No Action Alternative (GMPA 2000), but includes modifications to ensure its financial viability and to combine a number of concepts proposed in the November 2000 scoping alternatives into a single alternative — the Final Plan Alternative's key components include preservation of historic resources, expansion of open space, reduction in building space from 5.96 million sf to 5.6 million sf, and providing an enhanced level of cultural and educational programs for park visitors.

Under the Final Plan Alternative, the Trust would work together with partners including the NPS, tenants and residents to protect and enhance the Presidio's cultural, natural, scenic and recreational resources. The historic character and integrity of the NHLD would be protected while acknowledging the possibility for limited changes, including some new construction to facilitate the effective reuse of historic buildings or meet other plan objectives. Historic buildings and landscapes that distinguish the NHLD would be rehabilitated and adaptively used. The natural environment would be enhanced and non-historic housing in the southern portion of the park would be removed, resulting in an increase of open space. The historic forest would be protected and rehabilitated, streambed and riparian corridors and native plant communities would be expanded, and recreational opportunities would be and improved.

The Final Plan Alternative would monitor housing demand and provide supply (up to a maximum of about 1,650 units) with a continued preference for providing housing to Presidio-based employees. Non-historic housing that is removed to create open space will be replaced, if necessary. An improved mix of housing units would be achieved through an emphasis on subdividing and converting existing building space, with limited replacement construction of between 200 and 400 units.

The opportunities for diverse and meaningful visitor experiences would be made through an array of cultural, educational and stewardship programs available to local, national and international park visitors. Delivery of quality visitor and public programs would be accomplished through the cooperative efforts of the Trust, NPS, tenants, philanthropic organizations, cultural institutions, and community volunteers. The Trust and NPS would collaborate to provide interpretive services, visitor orientation, and educational programs, and the Trust would seek philanthropic support to supplement a baseline level

of program funds. Tenants would be selected on the basis of their; 1) ability to enhance the financial viability of the Presidio and facilitate reuse of historic buildings, 2) contribution to the implementation of the general objectives of the GMPA and visitor experience, and 3) compatibility with the PTMP preferred uses and planning principles. Land uses and description of land use preferences are shown in Figures 5 and 6 in Chapter 2 (Alternatives).

Final Plan Variant

The Final Plan Variant was recommended by several environmental organizations during the public review and comment period on the Draft EIS and Draft Plan. Under the Final Plan Variant, greater building demolition and therefore less built space as well as no new construction would occur. Similar to the Final Plan, the Variant would seek to rehabilitate and reuse historic buildings, adapt non-historic buildings to high priority uses, expand open space, and achieve financial self-sufficiency. In the Variant, there would be proportionately less cultural/educational building use and proportionately more office use in comparison to the Final Plan Alternative. Overall built space at the park would be reduced from 5.96 million sf to 4.71 million sf. Housing options in the Variant differ somewhat from the Final Plan; as in the Final Plan, housing units removed in other parts of the park would be replaced through subdivision and conversion of existing space, but the possibility of obtaining any replacement units through new construction or modifying existing space by adding square footage is foreclosed in the Final Plan Variant. Unlike the Final Plan, tenants would not be selected unless they offered a mission-serving business purpose and park programming; in this respect, the Variant is similar to the No Action Alternative (GMPA 2000). Land uses and description of land use preferences are shown in Figures 6a and 6b in Chapter 2 (Alternatives).

Resource Consolidation Alternative

Under this alternative, the Presidio would become an enhanced open space haven in an urban setting by maximizing the increase in open space in the southern part of the park and concentrating development in the north. Overall, building square footage in Area B would be reduced from current levels due to the loss of residential units and building space. A substantial number of buildings would be demolished, including the entirety of the historic Public Health Service Hospital (PHSH) complex, which would affect the integrity of

SUMMARY

the NHLD. Open space and natural resource enhancements (endangered species recovery and Tennessee Hollow riparian restoration) would be maximized and recreational opportunities expanded. Tenets of sustainability, biodiversity, smart growth, and preservation would be promoted by preserving and enhancing the Presidio's natural and cultural resources and concentrating building area, including in-fill mixed-use and housing construction in the northern part of the park. Buildings would be rehabilitated for new uses. The primary goal would be reuse of existing structures along with compatible new construction that would generate sufficient funds for open space improvements and park enhancements. Overall built space at the park would be reduced from 5.96 million sf to 5.3 million sf. Park programs would be delivered in a manner similar to the Final Plan Alternative, but at a somewhat reduced level. Programs would focus on the park's biodiversity, including native species and ecosystems, and the history of the Presidio. Land uses and description of land use preferences are shown in Figures 7 and 8 in Chapter 2 (Alternatives).

Sustainable Community Alternative

Under this alternative, the Presidio would become a sustainable live/work community in a park setting and a model of environmental sustainability. There would be an emphasis on creating a Presidio-based community of users offering innovative, state-of-the-art ideas and approaches on environmental sustainability and related subjects.

Open space and recreational opportunities would be expanded, and historic forest and native plant communities improved. Riparian corridors would be restored and the historic forest rehabilitated and preserved as part of the cultural landscape. The historic character and integrity of the NHLD would be protected. A moderately low level of non-historic building demolition would occur to enhance open space and improve native plant communities.

The footprint of the built environment would largely remain in its present dispersed pattern, with an overall reduction in built space from 5.96 million sf to 5.69 million sf. An emphasis would be placed on building rehabilitation and reuse. While the existing number of housing units would decrease, the total number of units would be more than under the No Action Alternative (GMPA 2000). Residents would also work in the park, improving the jobs/housing balance, and supporting a sustainable park community. Park programs would

be delivered in a manner similar to that proposed by the Final Plan Alternative, but at a somewhat reduced level. Land uses and description of land use preferences are shown in Figures 9 and 10 in Chapter 2 (Alternatives).

Cultural Destination Alternative

In this alternative, the Presidio would be a national and international cultural destination park, a portal for visitors to the American West and Pacific, and a place of international distinction for its programs in research, education, and communication. Historic and natural resources would be protected to preserve the Presidio as a sustainable national park. Open space would be expanded. Native plant communities and riparian corridors would be restored. The historic forest would be rehabilitated and preserved as part of the cultural landscape. Recreational opportunities would be increased. A substantial level of non-historic building demolition in the southern portion of the park would occur to enhance open space and restore critical habitat. Overall built space at the park would stay at its current level of 5.96 million sf. Replacement construction would occur in the northern portion of the park to provide an improved mix of housing units and cluster housing near work and transit.

The Trust would be primarily responsible for delivery of a wide variety of high quality programs in cooperation with NPS, tenants, philanthropic organizations, cultural institutions, and community volunteers. Tenants would support park programming in a number of ways, including directly providing a public program for park visitors, contributing financially, or offering in-kind services to a park program. Tenants would be selected in part for their financial contribution (as required by the Trust Act) and willingness and ability to support park program goals. Land uses and description of land use preferences are shown in Figures 11 and 12 in Chapter 2 (Alternatives).

Minimum Management Alternative

Under this alternative, the existing resources of the Presidio would be managed to the minimum extent needed to meet basic legal requirements including protection of the visiting public and the park's resources. There would be no significant physical change beyond that already underway; no significant park enhancements, no new building construction or building removal would occur. The 1994 GMPA would not be implemented in

Area B. Buildings would simply be rehabilitated to meet essential code requirements consistent with the Secretary of the Interior's Standards for historic buildings, and then leased out for the highest and best use. Tenants would have discretion in offering publicly available programs, and preference would be given to those tenants proposing to offer programs or services consistent with the General Objectives of the GMPA. There would be little educational, visitor, or cultural programming beyond what already exists. The Wherry housing complex would remain in use indefinitely as housing. Natural resource systems would not be significantly enhanced. Housing would be improved to meet code and historic preservation requirements and made available for rent by Presidio-based employees and others according to a prioritization system. Anticipated land uses and description of land use preferences are shown in Figures 13 and 14 in the Chapter 2 (Alternatives).

MAJOR CONCLUSIONS

The impact topics and major impact conclusions from the EIS are summarized in Table S-1 at the end of this section.

ISSUES TO BE RESOLVED

The Trust Board of Directors (the agency's decision-makers) will review and consider the contents of this Final EIS, including the Response to Comments (RTC) volume and Final Plan document. Following review and consideration of these documents, the Board may decide to take action on the project. Such action could include, but is not limited to the adoption of a particular alternative, rejection of all alternatives, and/or partial or conditional approval of a particular alternative. Any action taken by the Trust Board regarding this project will be documented and explained in a Record of Decision (ROD) which will not be finalized until at least 30 days after the U.S. Environmental Protection Agency publishes a notice of availability of this Final EIS in the Federal Register.

Because the EIS alternatives are described at a general or policy level, and the EIS is programmatic in nature, future implementation decisions may require more specific analysis. As the physical and financial feasibility of specific building uses or other projects are determined, their potential impacts will be assessed and compared to the impacts and mitigation measures described in this EIS. The potential for new impacts or impacts that are substantially more severe than described here may necessitate further environmental assessment

Concerns related to future implementation activities and questions about future opportunities for public involvement were a common theme in the public comments received on the Draft EIS and Draft Plan. In response to these comments, the Trust incorporated additional specificity on the future review processes into the Final Plan (see Chapter 4).

Other issues to be resolved include the eventual selection and implementation of an alternative for Doyle Drive, and completion of environmental remediation. As a Cooperating Agency, the Trust will continue to be involved in the planning for reconstruction of Doyle Drive (which runs through the northern part of the park). The proposed reconstruction is intended to correct existing safety and structural problems. The Trust is working with the lead agencies for the project to ensure that the selected alternative provides the Presidio with major transportation benefits, minimizes potential land use conflicts, and provides potential aesthetic and environmental improvements. Because of its location, Doyle Drive could provide a direct entrance into the Presidio, helping to enhance intermodal transit access and reduce traffic that currently uses the Presidio's residential area gates. Several of the preliminary alternatives would also require the removal of multiple historic buildings. The Trust will work with the Doyle Drive project team and NPS to ensure that impacts to historic resources are minimized, and potential land use conflicts and competing uses are also addressed. Reopening of scenic vistas from the Main Post, cemetery, and cavalry stables across Crissy Field to San Francisco Bay will also be promoted. Through its continued involvement in this project, the Trust will ensure that relevant planning activities within Area B are coordinated with the Doyle Drive project.

Based on its historic use as a military installation, there are several areas of the Presidio that have been contaminated by a variety of hazardous substances. To date, a substantial amount of analysis, investigation, regulatory consultation, and public involvement has been completed initially by the Army and now by the Trust, in coordination with NPS, to address these known and potential unknown sites. Issues identified in this process include the location and type of contamination, type of contaminants to be covered by the remediation program, required clean-up levels and future uses. Although clean up has started, it has not been completed and will be an ongoing program in the coming years. Implementation of the proposed land uses, restoration efforts, demolition and other activities addressed in this EIS will be coordinated with the ongoing remediation program.

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.2.1 Historic Architecture and Cultural Landscape								
Individual Buildings and the National Historic Landmark District	Overall beneficial effect on historic resources due to bldg rehabilitation, stabilization and maintenance. No new adverse affect from demolition of 11 historic buildings, would not affect the landmark's status, per analysis in the GMPA EIS.	Overall beneficial effect on historic resources due to building rehabilitation, stabilization, and maintenance.	Beneficial effects due to building rehabilitation, stabilization and maintenance.	Beneficial effects due to building rehabilitation, stabilization and maintenance.	Beneficial effects due to building rehabilitation, stabilization and maintenance.	Beneficial effects due to building rehabilitation, stabilization and maintenance.	In general beneficial effect on through the stabilization and rehabilitation of historic buildings, but opportunity is missed to restore areas to their period of significance through demolition of non-historic elements.	Adapted from the GMPA EIS: CR-1 through CR-4 New mitigation: CR-7

¹ This summary is provided as an aide for the reader and should be reviewed in conjunction with Chapters 3 and 4 of this EIS. This table attempts to summarize complex information into short statements and in the event that there is a discrepancy between Chapter 4 and this table, Chapter 4 text prevails. For a discussion of cumulative effects, see Section 4.8.

² For the full text of the mitigation measures referenced (i.e., CR-1), please refer to Chapter 4.

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Cultural Landscape	Changes would be generally beneficial. There would be a substantial level of non-historic building demolition to expand open space and re-create historic linkages of natural, cultural and visual areas (e.g. Main Post to Crissy Field connection), as well as rehabilitation of the historic forest and vistas, and site improvements.	Similar to the No Action Alternative in terms of treatment of significant features, rehabilitation of the historic forest and vistas, and site improvements.	Similar to the No Action Alternative, except for changes to the historic Mason Street streetscape.	Would have the greatest amount of building demolition, most notably the removal of the historic PHSF and more new construction. Would result in the most noticeable changes to the Presidio cultural landscape. However, this alternative would also provide for the rehabilitation of the historic forest and vistas, as well as other site improvements.	Similar to the No Action Alternative, in terms of treatment of significant features, the historic forest and vistas, and site improvements.	Similar to the No Action Alternative in terms of treatment of significant features, the historic forest and vistas, and site improvements.	Changes to the cultural landscape would be minimal as there would be no demolition or new construction.	Adapted from the GMPA EIS: CR-1 through CR-6. New mitigation CR-7 and CR-8.
4.2.2 Archaeological Resources								
Destruction of, or Damage to, Archaeological Resources	New construction, demolition and/or restoration activities proposed throughout the Presidio have the potential to adversely affect prehistoric and historic archaeological resources.	Similar to the No Action Alternative with higher overall potential to adversely affect archaeological resources based on greater amount of new construction. In particular, there would be greater potential for impacts in the East Housing Planning District where replacement housing may occur within the Tennessee Hollow riparian corridor.	Similar impacts to the No Action Alternative except there would be potential for effects due to new construction. Removal of additional buildings on Mason Street has potential to impact significant archaeological area.	Similar to the No Action Alternative with higher overall potential to adversely affect archaeological resources based on greater amount of new construction. Removal of buildings in the PHSF district could impact archaeological resources.	Similar to the No Action Alternative with higher overall potential to adversely affect archaeological resources based on greater amount of new construction.	Similar to the No Action Alternative with higher overall potential to adversely affect archaeological resources based on greater amount of new construction.	This alternative would have the least severe impacts on known or unknown sites, because there would be no major demolition, new construction, or major new habitat restoration activities.	New Mitigation CR-8 through CR-15.

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.3.1 Biological Resources								
Direct and Indirect Effects on Native Plant Communities	Native plant communities could be affected by demolition, new construction, and land uses. Beneficial effects on native plant communities through proposed restoration and a substantial increase in existing open space.	Similar to the No Action Alternative for open space expansion, with slightly more native plant community restoration. There would be less disturbance from demolition, and greater potential for effects from increased construction and land use activities than the No Action.	Similar beneficial effects to the No Action Alternative, with expansion of open space and native plant communities. Increased potential disturbances due to demolition, and no effects due to new construction.	Would have an increased long-term beneficial effect on native plant communities, compared to the No Action Alternative due to substantial increase in open space and planned restoration activities. Would have greater potential for direct effects due to new construction.	Compared to the No Action Alternative, would have a less beneficial effect on native plant communities, due to smaller increase in open space. Would have greater potential for direct effects due to demolition and new construction.	Similar to the No Action Alternative, would have a beneficial effect through provision of additional open space, however, there would be increased potential for effects due to demolition, construction and land uses.	Reduced restoration benefits, compared to the No Action Alternative, as no additional restoration of native plant communities (beyond existing) would occur. Overall would have the greatest direct effect on native plant communities of all alternatives.	Adapted from the GMPA EIS: NR-1 New Mitigation: NR-5, NR-6, NR-10, NR-11 and NR-20
Direct and Indirect Effects on Wildlife	Under this alternative, habitat restoration and expansion of open space areas would provide long-term beneficial effects on wildlife and would help to offset effects associated with construction, demolition and increased land use activities.	Similar to No Action Alternative, with greater potential for wildlife effects based on increased levels of construction and land uses.	Similar to the No Action Alternative with more beneficial effects resulting from increase in open space reducing edge effect pressures, reduction of habitat fragmentation due to increased building demolition.	Similar effects to the No Action Alternative, with increased open space reducing some of the edge effect pressures and much of the habitat fragmentation in the southwestern sections of the Presidio.	Similar, but slightly less effects than the Final Plan Alternative. Impacts could include increased habitat fragmentation and increased use levels, potential natural resource conflicts in specific areas.	Similar to the Final Plan Alternative, with a higher potential for impact based on greater levels of demolition, construction and use levels.	No new construction, demolition, or habitat restoration would occur. Without habitat restoration and open space benefits to offset increased use, this alternative could result in direct and indirect wildlife impacts.	Adapted from the GMPA EIS: NR-2 New Mitigation: NR-5 through NR-9, and NR-12

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Nesting Habitat	Proposed demolition and construction activities could destroy nests or disturb nesting activities, and would provide an increase in habitat over the long-term.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative, with greatest increase of open space among the alternatives.	Similar to the No Action Alternative, with a reduction in the amount of new habitat.	Similar to the No Action Alternative.	No expansion in habitat beyond existing. Potential disturbances would be associated only with building rehabilitation and reuse (no demolition or construction would occur).	Adapted from the GMPA EIS: NR-2 New Mitigation: NR-5 through NR-9 and NR-12)
Wildlife Movement	Wildlife corridors would benefit from proposed habitat restoration activities. However, demolition, new construction and land uses (to the extent they occur in or adjacent to wildlife corridors) could disrupt wildlife movement and migration.	Similar to the No Action Alternative with a greater potential for disrupting wildlife movement (including California quail) in the PHSW Planning District due to reuse of the Nike Missile site.	Similar to the No Action with increased potential of enhancing wildlife corridors, resulting from greater amounts of open space.	Similar to the No Action Alternative; however, this alternative would provide the greatest amount of open space and would therefore have the greatest potential of enhancing wildlife movement in the southern portion of the park.	A greater potential for disrupting wildlife and a reduction in habitat restoration efforts than the No Action Alternative, due to increased new construction and demolition.	Similar to the Final Plan Alternative with greater potential for disruption, due to more construction and demolition activities.	No open space expansion would occur and existing wildlife corridors would continue to be fragmented, limiting wildlife movement.	Adapted from the GMPA EIS: NR-1 New Mitigation: NR-5, NR-6, NR-7, NR-9, and NR-12
Special-Status Plants	This alternative would provide an overall increase in the quality and quantity of habitat for special-status plant species, and most beneficial effects among alternatives on existing open space.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	No demolition or construction-related effects on special-status plants would occur. However, retention of Wherry housing would preclude recovery of a listed plant (San Francisco lessingiae) and would have an adverse impact.	Adapted from the GMPA EIS: NR-1 and NR-3 New Mitigation: NR-4 through NR-7, NR-9, NR-11 and NR-12

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Special-Status Wildlife	This alternative would provide an overall increase in the quality and quantity of habitat for special-status wildlife species.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	Similar beneficial effects as the No Action Alternative.	No demolition or construction-related effects on special-status wildlife would occur. However, habitat values would not increase beyond current restoration efforts. Overall, a reduction in potential habitat compared to the No Action Alternative.	Adapted from the GMPA EIS: NR-1 through NR-3 New Mitigation: NR-4 through NR-10 and NR-12
Direct and Indirect Impacts on Wetlands and Other Water Features	Demolition, construction and new land uses proposed could result in wetland degradation and disturbance. Overall, restoration of hydrological processes proposed would offset potential impacts, providing a long-term beneficial effect on wetland resources.	Similar to the No Action Alternative, however, would have greater potential for wetland impacts based on increase in construction and use levels, and reduced restoration activities.	Greater beneficial effect on wetlands than the No Action Alternative.	Similar to the No Action Alternative, with greatest beneficial effect on wetlands among the alternatives.	Similar but slightly less effects than those of the Final Plan Alternative.	Similar to Final Plan Alternative, with greater potential for impacts associated with higher demolition, construction and use levels.	No demolition and construction-related disturbances or restoration would occur. These combined would result in an adverse impact.	New Mitigation: NR-13 through NR-19
Water Quality	Demolition, construction, and various operational activities could create indirect downstream impacts from erosion, sedimentation, and discharges of other pollutants.	Similar to the No Action Alternative, with increased potential for effects associated with greater level of construction over the 20-year planning horizon.	Similar to the Final Plan Alternative, with no potential for construction-related impacts.	Similar to the Final Plan Alternative.	Similar to the No Action Alternative.	Similar to the Final Plan Alternative.	Demolition and construction-related effects would be avoided. However, operational activities have the potential to create indirect downstream impacts.	Adapted from the GMPA EIS: NR-13 and NR-14 New mitigation NR-15 through NR-19

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.3.3 Visual Resources								
Change In Visual Character	This alternative would preserve and enhance the visual character of the Presidio. Historic vistas and view corridors would be restored, and new construction would be limited and designed to be compatible with historic character of park.	Similar to the No Action Alternative, with a higher level of new, compatible construction.	Similar beneficial visual effect as the No Action Alternative, with increased open space.	This alternative would substantially enhance the open space and natural character of the area along the park's southern boundary. New construction would be designed to be compatible with existing character.	Similar to the No Action Alternative.	Similar to the Final Plan Alternative.	No changes to the existing visual character and no restoration of important views or other beneficial effects associated with the other alternatives.	New Mitigation: CR-5, CR-6, NR-1, and NR-7.
4.3.4 Air Quality								
General Construction/ Demolition Emissions	Operation of heavy equipment and other activities associated with demolition, construction, and rehabilitation would generate fugitive dust and other pollutants that could degrade local air quality.	Similar to the No Action Alternative, with higher potential emissions.	More emissions associated with demolition, but overall less potential for emissions than the No Action Alternative due to no new construction.	Higher potential emissions than the No Action Alternative, due to more demolition and new construction.	Similar to the No Action Alternative.	Higher potential for emissions due to increased amount of new construction compared to the No Action Alternative.	No demolition or new construction. Rehabilitation would generate limited emissions.	Adapted from GMPA EIS: NR-20 New Mitigation: NR-22
Consistency with Regional Clean Air Plans	If job growth outpace the GMPA projections, emissions could be inconsistent with those assumed in the 2000 CAP and would delay attainment of ambient air quality standards. However, future CAP revisions would incorporate anticipated growth.	Housing and employment growth could induce emissions that would be inconsistent with CAP assumptions. However, future CAP revisions would incorporate anticipated growth. Similar to the No Action Alternative.	Similar to the Final Plan Alternative.	Similar to the Final Plan Alternative.	Similar to the Final Plan Alternative.	Similar to the Final Plan Alternative.	Similar to the Final Plan Alternative.	Adapted from GMPA EIS: NR-21

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Potential Localized CO Violations	CO concentrations would range up to 5.4 ppm for 1-hour averages and 3.3 ppm for 8-hour averages, which would not exceed ambient air quality standards.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Adapted from GMPA EIS: NR-21
Regional Emissions	Daily internal and external vehicle trips in 2020 would generate about 175 lbs/day of ROG and 339 lbs/day of NOx.	Daily internal and external vehicle trips in 2020 would generate approximately 55 lbs/day more of ROG and 106 lbs/day more of NOx than the No Action.	Daily internal and external vehicle trips in 2020 would not be substantially increase regional emissions of ROG or NOx above the No Action Alternative levels.	Daily internal and external vehicle trips in 2020 would generate about 54 lbs/day more of ROG and 104 lbs/day more of NOx than the No Action Alternative.	Daily internal and external vehicle trips in 2020 would generate about 85 lbs/day more of ROG and 166 lbs/day more of NOx than the No Action Alternative.	Daily internal and external vehicle trips in 2020 would generate about 73 lbs/day more of ROG and 142 lbs/day more of NOx than the No Action Alternative.	Daily internal and external vehicle trips in 2020 would generate about 81 lbs/day more of ROG and 157 lbs/day more of NOx, than the No Action Alternative.	Adapted from the GMPA EIS: NR-20, NR-21. New mitigation: NR-22
4.3.5 Noise								
General Construction/ Demolition Noise	Noise generated by demolition, construction, and rehabilitation activities would have the potential to intermittently affect Presidio tenants, recreational users, and nearby residences.	Similar to the No Action Alternative with greater potential for construction-related disturbances over the 20-year planning horizon.	Demolition activities would have similar potential to intermittently disrupt tenants, recreational users, and adjacent residences.	Greater potential than the No Action Alternative to intermittently disrupt Presidio tenants, recreational users, and adjacent residences because the levels of demolition and new construction would be greater.	Similar to the No Action Alternative.	Greater potential than the No Action Alternative to disrupt Presidio tenants, recreational users, and nearby residences because the levels of demolition and new construction would be greater.	No new construction or demolition would occur, so construction noise would be limited to building rehabilitation and stabilization.	Adapted from the GMPA EIS: NR-23
Traffic Noise	Traffic noise increases would occur within the Presidio, and would increase within the adjacent neighborhoods.	Traffic noise levels would similar to the No Action Alternative, and would be noticeably higher at three locations within the park.	Traffic noise levels would similar to the No Action Alternative, and would be noticeably higher at two locations within the park.	Traffic noise levels would similar to the No Action Alternative, and would be noticeably higher at two locations within the park.	Traffic noise levels would similar to the No Action Alternative, and would be noticeably higher at three locations within the park.	Traffic noise levels would similar to the No Action Alternative, and would be noticeably higher at two locations within the park.	Similar to the No Action Alternative.	Adapted from the GMPA EIS: NR-24. New Mitigation: NR-25

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Noise from Stationary Sources	Building operations and equipment and increased human activity would increase noise levels but would not exceed the levels articulated in the San Francisco Noise Ordinance.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar the No Action Alternative.	Similar to the No Action Alternative.	Adapted from the GMPA EIS: NR-23
4.4.1 Land Use								
Changes In Building and Land Uses	Vacant buildings would be occupied, the amount of residential space would decrease, and visitor services would increase. Open space would be expanded. No substantial conflicts with adjacent land uses.	Similar to the No Action Alternative, with more building space used for housing and less for Industrial/ support uses. More open space in the South Hills district. No substantial conflicts with adjacent land uses.	Similar to the No Action Alternative, with less overall built space, but more office and residential use. Would create more open space at Crissy Field and the East Housing districts than the No Action Alternative. No substantial conflicts with adjacent land uses.	More open space than the No Action Alternative (based on removal of the PHS), and a greater number of residential units. No substantial conflicts with adjacent land uses.	Compared to the No Action Alternative, there would be less open space and more residential uses. No substantial conflicts with adjacent land uses.	More open space in the South Hills district, and more residential, office and public uses than No Action. No substantial conflicts with adjacent land uses.	Vacant buildings would be occupied, and there would not be a reduction in existing built space at the park (which would occur under all other alternatives except Cultural Destination). There would be more office and residential uses than No Action; and less public uses. No substantial conflicts with adjacent land uses.	New Mitigation: CO-1

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.4.2 Socioeconomic Issues/Housing Supply								
Increased Demand for Housing	New Presidio employment would generate total demand for 2,840 new households, approximately 2% of the new households projected in the Housing Impact Area (HIA).	New Presidio employment would generate demand for more housing units than the No Action Alternative, but would differ by maintaining the existing supply of housing. In comparison to the No Action, housing demand in the HIA would be reduced.	New employment in the Presidio would generate demand for more housing units than the No Action Alternative and would maintain more of the existing supply of housing but less than the Final Plan. In comparison to the Final Plan, Housing demand in the HIA would be reduced when compared to the No Action.	Presidio employment would generate demand for more housing units than the No Action Alternative and would maintain more of the existing housing supply but less than the Final Plan. In comparison to the No Action, housing demand in the HIA would increase.	Presidio employment would generate demand for more housing units than the No Action Alternative and would maintain more than half of the existing supply. There would be a negligible change in HIA housing demand when compared to the No Action Alternative.	Presidio employment would generate more demand for housing than the No Action Alternative and would provide the most housing of the alternatives. In comparison to the No Action, there would be a small reduction in HIA housing demand.	In comparison to the No Action Alternative, there would be a net increase in HIA housing demand. Existing on-site housing supply would be maintained.	Adapted from the GMPA EIS: CO-2
Jobs/Housing Balance	Would provide the least number of units and contributes the least towards a jobs/housing balance (meets about 36% of Presidio demand) out of the alternatives.	Compared to the No Action and all other alternatives except Cultural Destination, would contribute the most towards a jobs/housing balance.	Would contribute more towards achieving a jobs/housing balance than the No Action Alternative (meets about 50% of Presidio demand).	Would contribute more towards achieving a jobs/housing balance than the No Action Alternative (meets about 70% of Presidio demand).	Would contribute more towards achieving a jobs/housing balance than the No Action Alternative (meets about 77% of Presidio demand).	Would provide sufficient housing supply to meet 89 percent of anticipated employees housing demand - the highest among all alternatives.	Would contribute more towards achieving a jobs/housing balance than the No Action Alternative (meets 70% of Presidio demand).	Adapted from the GMPA EIS: CO-2

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.4.3 Schools								
Increased Demand for School Facilities	Would generate demand for facilities to accommodate 48 elementary students, 24 middle school students, and 33 high school students. The San Francisco Unified School District (SFUSD) could accommodate the school age population.	Would generate greater demand for school facilities than the No Action (about 125 elementary school students, 63 middle school students, and 86 high school students). The SFUSD district could accommodate the elementary and middle school age population. The high school age population would exceed current capacity.	Would generate greater demand for school facilities than the No Action (about 93 elementary school students, 47 middle school students, and 64 high school students). There would be no impact to the SFUSD for the additional elementary and middle schools, but would marginally exceed capacity of high schools.	Would generate greater demand for school facilities than the No Action (about 84 elementary school students, 42 middle school students, and 58 high school students). The SFUSD could accommodate most of the school age population (high school capacity would be marginally exceeded).	Would generate greater demand for school facilities than the No Action (about 114 elementary school students, 58 middle school students, and 79 high school students). The SFUSD could accommodate the elementary and middle school age population. The high school age population would exceed current capacity.	Would generate greater demand for school facilities than the No Action (about 138 elementary school students, 69 middle school students, and 95 high school students). The SFUSD could accommodate the elementary and middle school age population. The high school age population would exceed current capacity.	Would generate greater demand for school facilities than the No Action (about 107 elementary school students, 54 middle school students, and 74 high school students). The SFUSD could accommodate the elementary and middle school age population. The high school age population would exceed current capacity.	New Mitigation: CO-3
4.4.4 Visitor Experience								
Impact on Visitor Experience	This alternative would provide a variety of improvements to interpretive and educational opportunities for the public. Projected visitation would be 5.2 million per year.	Would provide for a greater variety of visitor facilities for the public than the No Action. Projected visitation would be 7.2 million per year.	Similar to the No Action Alternative. Projected visitation would be 5.9 million per year.	Would provide less variety of visitor facilities than the No Action Alternative. Focus of programs on resource protection, sustainability education. Projected visitation would be 7.0 million visitors per year.	Would provide less variety of public facilities than the No Action Alternative. Program emphasis on serving local visitors and residents. Projected visitation would be 8.2 million per year.	A greater variety of visitor facilities for the public than the No Action Alternative or any other. Projected visitation would be 7.2 million per year.	Minimal actions would be taken to expand visitor facilities and programming, and in comparison to the No Action, there would be few benefits to enhance the visitor experience. Projected annual visitation would be 6.5 million.	New Mitigation: CO-4 through CO-8.

SUMMARY

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.4.5 Recreation								
Impact on Recreational Activities	Recreational activities and related programs would be improved which would be a beneficial effect. Most existing recreational facilities would be retained, however some (i.e. ballfields) may be removed which would have an adverse effect on current users. Implementation of a Trails and Bikeways Master Plan would provide greater access.	Effects would be similar to the No Action Alternative. Options for replacement of facilities that may be removed and additional built indoor and outdoor facilities would be considered.	Similar to the No Action Alternative, except for the removal of one additional ballfield (Pop Hick's).	Effects would be similar to the Final Plan Alternative. Additional emphasis on passive recreational opportunities for stewardship, nature appreciation, and solitude. Closure of some roads would further benefit bicyclists and pedestrian users.	Similar to the Final Plan Alternative.	Similar to the Final Plan Alternative.	All existing facilities would be retained for public use. No new trails and bikeways would be established, and there would be little change in recreational activities and program opportunities.	New Mitigation: CO-9 through CO-11
4.4.6 Public Safety								
Increased Demand for Public Safety Services	Increase in resident and employee populations would increase demand for law enforcement, fire and emergency response services. Services would need to be reviewed and expanded as necessary as development occurs.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	New Mitigation: CO-12

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.5 Transportation and Circulation								
Increased Congestion on Local Roadways	Would generate an estimated 33,822 daily vehicle trips. Of the 37 studied intersections, 7 would operate at LOS E or F under during the a.m. peak hour, and 13 during the p.m. peak hour. Except for Lincoln Blvd/Bowley Ave, Park Presidio Blvd/Lake St and Park Presidio Blvd/California St, all intersections could be mitigated to acceptable LOS.	Would generate 31% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action plus 3 in a.m. and 5 in p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Would generate 8% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action plus 3 in a.m. and 2 in the a.m. and 3 in the p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Would generate 31% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action, plus 3 in a.m. and 3 in p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Would generate 49% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action, plus 3 in a.m. and 6 in p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Would generate 42% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action, plus 3 in a.m. and 6 in p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Would generate 46% more vehicle trips than the No Action Alternative. Unacceptable service levels at the same intersections as the No Action, plus 8 in a.m. and 5 in p.m. Following mitigation, all but the three intersections listed under the No Action would operate at acceptable LOS.	Adapted from the GMPA EIS: TR-1 through TR-8 New Mitigation: TR-11 through TR-20
Parking Demand and Supply	Would reduce parking to about 7,807 parking spaces and would have an average demand for 7,436 spaces, resulting in a surplus of 371 spaces or 5% above average demand.	Would reduce parking to about 9,165 parking spaces and would have an average demand of 8,729 spaces, resulting in a surplus of 436 spaces or 5% above average demand.	Would reduce parking to about 7,830 parking spaces and would have an average demand of 7,457 spaces, resulting in a surplus of 373 spaces or 5% above average demand.	Would reduce parking to about 8,978 parking spaces and would have an average demand of 8,550 spaces, resulting in a surplus of 428 spaces, or 5% above average demand.	Would reduce parking to about 9,790 parking spaces and would have an average demand of 9,126 spaces, resulting in a surplus of 456 spaces, or 5% above average demand.	Would reduce parking to about 9,582 parking spaces and would have an average demand of 10,354 spaces, resulting in a surplus of 856 spaces, or 8% above average demand.	Would maintain the current parking supply of 11,210 spaces and would have a demand of 10,354 spaces, resulting in a surplus of 856 spaces, or 8% above average demand.	New Mitigation: TR-21 through TR-24
Pedestrian and Bicycle Facilities	Would generate about 10,700 daily pedestrian and bicycle trips, which would be accommodated within existing facilities and proposed future improvements to be addressed in the Presidio Trails and Bikeways Master Plan.	Would generate about 16,400 daily pedestrian and bicycle trips (53% more than the No Action), which would be accommodated within the Presidio's improved trail and bikeway network.	Would generate about 12,800 daily pedestrian and bicycle trips (19% more than the No Action), which would be accommodated within the Presidio's improved trail and bikeway network.	Would generate about 15,500 daily pedestrian and bicycle trips (45% more than the No Action), which would be accommodated within the Presidio's improved trail and bikeway network.	Would generate about 18,000 daily bicycle and pedestrian trips (68% more than the No Action), which would be accommodated within the Presidio's improved trail and bikeway network.	Would generate about 18,400 daily bicycle and pedestrian trips (72% more than the No Action), which would be accommodated within the Presidio's improved trail and bikeway network.	Would generate about 11,600 daily bicycle and pedestrian trips (8% more than the No Action).	Adapted from the GMPA EIS: TR-9

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Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
Transit Demand	Would generate an estimated 10,340 daily transit trips on Muni, GGT and the Presidio's internal shuttle, on a weekday daily basis.	Would generate an estimated 17,300 daily transit trips on Muni, GGT and the Presidio's internal shuttle, 67% more trips than the No Action Alternative.	Would generate an estimated 13,556 daily transit trips on Muni, GGT and the Presidio's internal shuttle, 31% more trips than the No Action Alternative.	Would generate an estimated 17,062 daily transit trips on Muni, GGT and the Presidio's internal shuttle, 65% more trips than the No Action Alternative.	Would generate an estimated 19,054 daily transit trips on Muni, GGT and the Presidio's internal shuttle, 84% more trips than the No Action Alternative.	Would generate an estimated 19,092 daily transit trips on Muni, GGT and the Presidio's internal shuttle, 85% more trips than the No Action Alternative.	Would generate an estimated 11,213 daily transit trips on Muni, GGT, 8% more than the No Action Alternative.	Adapted from the GMPA EIS: TR-10 New Mitigation: TR-25
Construction Traffic	Construction-related traffic could generate congestion that would require traffic management to minimize potential effects.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	Similar to the No Action Alternative.	No demolition or new construction under this alternative, so construction-related traffic would be minimal.	New Mitigation: TR-26
4.6.1 Water Supply and Demand	Projected daily water demand would range from 0.6 to 1.78 million gallons per day (mgd). Lobos Creek provides 0.7 to 1.6 mgd, and the proposed water recycling project would provide up to 0.5 mgd of non-potable water. Supplemental (off-site) water would be purchased to meet peak demands.	Projected daily water demand would be slightly higher than the No Action Alternative at 0.75 to 1.93 mgd. Like the No Action Alternative, supplemental water supplies would be purchased to meet peak demands.	Projected daily water demand would be similar to the No Action Alternative (0.61 to 1.86 mgd). Like the No Action Alternative, supplemental water supplies would be purchased to meet peak demands.	Projected daily water demand would be slightly greater than the No Action Alternative (0.66 to 1.98 mgd). Like the No Action Alternative, supplemental water supplies would be purchased to meet peak demands.	Projected daily water demand would be slightly higher than the No Action Alternative at 0.74 to 1.85 mgd. Like the No Action Alternative, supplemental water supplies would be purchased to meet peak demands.	Projected daily water demand would be the highest under this alternative at 0.84 to 2.08 mgd, and supplemental water supplies would be purchased to meet peak demands.	Projected daily water demand would be slightly lower than the No Action Alternative at 0.59 to 1.69 mgd; however, supplemental water supplies would still be purchased to meet peak demands.	New Mitigation: UT-1 through UT-3

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.6.2 Wastewater Treatment and Disposal								
Increased Wastewater Generation	Would generate about 0.51 million gallons per day (mgd) of raw wastewater, or 0.11 mgd more than current flows.	Would generate about 0.65 mgd of raw wastewater or 0.14 mgd more than the No Action Alternative.	Would generate about 0.52 mgd of raw wastewater – roughly the same amount as the No Action Alternative.	Would generate about 0.57 mgd of raw wastewater or slightly more (0.06 mgd) than the No Action Alternative.	Would generate about 0.64 mgd of raw wastewater or 0.13 mgd more than the No Action Alternative.	Would generate about 0.73 mgd of raw wastewater or 0.22 mgd more than the No Action Alternative.	Would generate about 0.50 mgd of raw wastewater which is slightly less (0.01 mgd) than the No Action.	New Mitigation: UT-4 and UT-5
4.6.3 Storm Drainage								
Increased Demand for Stormwater Drainage	No increase in stormwater flow, with the exception of Fort Scott. Implementation of a SPPP and associated BMPs to reduce runoff and improve water quality would be implemented as part of this alternative.	There would be an increase in stormwater flows when compared to the No Action Alternative (approximately 8.7 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	There would be a net reduction in total runoff when compared to the No Action Alternative (approximately -3.9 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	There would be an increase in stormwater flows when compared to the No Action Alternative (approximately 9.4 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	There would be an increase in stormwater flows when compared to the No Action Alternative (approximately 16.5 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	There would be an increase in stormwater flows when compared to the No Action Alternative (approximately 8.3 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	There would be an increase in stormwater flows when compared to the No Action Alternative (approximately 7.8 cfs more). Like the No Action, a SPPP would be implemented to minimize runoff and improve water quality.	New Mitigation: UT-6 and UT-7
4.6.4 Solid Waste								
Increased Solid Waste Generation	Demolition, construction and rehabilitation activities at build-out would generate roughly 114,000 tons of debris over the next 20 years, which constitutes 0.08 percent of the annual regional solid waste stream.	Similar to the No Action Alternative, with slightly less (5,000 tons) over the 20-year planning horizon.	Similar to the No Action Alternative, with slightly more debris (roughly 12,000 tons) over the 20-year planning horizon.	This alternative would generate the most debris (roughly 163,000) which is 49,000 tons more than the No Action Alternative. Overall, this amount of debris constitutes 0.12% of the regional solid waste stream.	Similar to, but less than the No Action Alternative by about 15,000 tons.	Similar to the No Action Alternative, with slightly more debris (roughly 13,000 tons) over the 20-year planning horizon.	Minimal debris would be generated under this alternative (approximately 64,000 tons less than the No Action).	New Mitigation: UT-8

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Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.6.5 Energy Consumption and Distribution								
Demand for Electricity	Demand for electricity would be up to 47.80 million kilowatt hours annually, with a projected maximum demand of 6,456 kW.	Demand for electricity would be up to 50.24 million kilowatt hours annually (5% higher than the No Action), with a projected maximum demand of 7,646 kW.	The Final Plan Variant would have the lowest electricity demand among all alternatives (6% less than No Action). Projected annual demand would be up to 45.13 million kilowatt hours, with a projected maximum demand of 6,565 kW.	Demand for electricity would be up to 54.72 million kilowatts hours annually (13% higher than the No Action), with a projected maximum demand of 7,412 kW.	Demand for electricity would be up to 53.50 million kilowatts annually (12% higher than the No Action), with a projected maximum demand of 7,871 kW.	This alternative would have the highest demand for electricity (17% higher than the No Action) requiring up to 56.02 million kilowatts annually, with a projected maximum demand of 8,194 kW.	Demand for electricity would be up to 54.14 million kilowatts annually (13% higher than the No Action), with a projected maximum demand of 7,865 kW.	New Mitigation: UT-9 through UT-11, and UT-13
Demand for Natural Gas	This alternative would generate demand for up to 2.1 million therms of natural gas annually, 4.7 million therms below the Presidio's natural gas demand in 1990.	This alternative would generate demand for up to 2.3 million therms annually which is about 12% more than No Action Alternative.	The Final Plan Variant would have the lowest demand for natural gas among all of the alternatives. Projected annual demand would be up to 1.94 million therms annually which is about 5% less than No Action.	This alternative would generate demand for up to 2.2 million therms annually which is about 6% more than the No Action Alternative.	This alternative would have approximately the same demand for natural gas as the Final Plan Alternative.	This alternative would generate demand for up to 2.4 therms annually which is about 19% more than the No Action Alternative.	This alternative would have the same demand for natural gas as the Cultural Destination Alternative.	New Mitigation: UT-12 and UT-13
Energy Consumption	Total energy use would be about 369,000 million BTU annually. Overall, consumption per square foot would be about 44% lower than 1990 levels.	Energy use would be about 401,000 million BTU annually. Overall, consumption per square foot would be about 45% lower than 1990 levels.	Energy use would be about 348,000 million BTU annually. Overall, consumption per square foot would be about 44% lower than 1990 levels.	Total energy use would be approximately 404,000 million BTU annually. Overall, consumption per square foot would be about 42% lower than 1990 levels.	Total energy use would be approximately 416,000 million BTU annually. Overall, consumption per square foot would be about 44% lower than 1990 levels.	Total energy use would be approximately 436,000 million BTU annually. Overall, consumption per square foot would be about 44% lower than 1990 levels.	Total energy use would be approximately 429,000 million BTU annually. Overall, consumption per square foot would be about 45% lower than 1990 levels.	New Mitigation: UT-12 and UT-13.

Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
4.7 Presidio Trust Operations								
Presidio Trust Operations	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed by about 2040 and the implementation phase at the Presidio would be completed in approximately 2045. A relatively low-level (\$2 million/year) of public programming would be supported by the Trust, and a portion of non-residential space would be provided at lower rates to mission-related tenants.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed by about 2025 and the implementation phase at the Presidio would be completed by about 2029. A moderate level (stabilized in 2020 at \$5 million/year) of public park programming would be supported by the Trust.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed by about 2035 and the implementation phase at the Presidio would be completed by about 2045. A relatively low-level (\$2 million/year) of public programming would be supported by the Trust.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed by about 2030 and the implementation phase at the Presidio would be completed by about 2040. A medium level (\$8 million/year) of public park programming would be supported by the Trust.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed by about 2023 and the implementation phase at the Presidio would be completed by about 2040. A medium level (\$8 million/year) of public park programming would be supported by the Trust.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed between about 2030 and 2035, and the implementation phase at the Presidio would be completed in about 2040. A relatively high level (\$10 million/year) of public programming would be supported by the Trust.	Based on the results of financial modeling (Appendix K), this alternative would reach short-term financial self-sufficiency by FY 2013 and achieve long-term sustainability. Capital projects would be completed in 2016 and the implementation phase at the Presidio would be completed in 2018. A relatively low level (\$2 million/year) of public programming would be supported by the Trust.	No mitigated required
	This alternative would be the most sensitive to decreases in market rents. With a modest decline in market rents, this alternative would be moderately negatively impacted, but less affected than the No Action Alternative. It would remain self-sufficient and sustainable, and the implementation phase would be extended by only about 5 years (to year 2035).	With a modest decline in market rents, this alternative would be provided at lower rates to mission-related tenants.	With a modest decline in market rents, the Variant would be significantly negatively impacted (but less affected than the No Action Alternative), have slim operating margins after 2013.	With a modest decline in market rents, this alternative would be negatively impacted, but less affected than the No Action Alternative. It would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed and the implementation phase would be extended by about 20 years (to between 2060 and 2065).	With a modest decline in market rents, this alternative would be moderately negatively impacted, but less affected than the No Action Alternative. It would remain self-sufficient and sustainable, and the implementation phase would be extended by only about 5 years (to year 2035).	With a modest decline in market rents, this alternative would be significantly negatively impacted, but less affected than the No Action Alternative. It would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed, and the implementation phase would be extended by about 20 years (to year 2060).	This alternative has the strongest financial result and could bear modest to significant declines in market rents and still be viable. It would remain self-sufficient and sustainable, and the implementation phase, extended by only 2 years, would be complete by 2020.	

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Table S-1 Summary of Environmental Consequences and Mitigation¹

Impact	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management	Mitigation Measures ²
			and an extended implementation phase (to year 2060), but would remain financially sustainable.					

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1. PURPOSE AND NEED

The Trust is proposing to update the 1994 General Management Plan Amendment (GMPA) for the portion of the Presidio transferred to the Trust's jurisdiction in 1998. This Chapter provides background information and specifies the underlying purpose and need for this action.

1.1 SCOPE AND TYPE OF EIS

The GMPA is the foundation that guides the Trust's planning and decision-making. The GMPA's importance is reinforced by both the Trust Act and Trust policy. The Trust Act directs the Trust to manage Area B in accordance with the GGNRA Act purposes and the "general objectives" of the GMPA, the latter were defined in Trust Board Resolution 99-11 ("General Objectives"). The Presidio Trust Management Plan (PTMP) is intended to provide an updated land use policy framework for Area B of the Presidio wholly consistent with the GMPA's General Objectives, and which retains and builds on the GMPA's policies and principles. Since the time the GMPA was adopted and the Presidio Trust Act was enacted, key land use and financial conditions have changed. The PTMP is needed to take into account the new Trust Act requirements, conditions that have changed since the GMPA was adopted, new policies and management approaches, and to build in a measure of flexibility not contemplated in the GMPA. Once adopted, the PTMP will be the plan that the Trust looks to in making future management and implementation decisions in Area B, consistent with the purposes of the GGNRA Act and the General Objectives of the GMPA. The GMPA will remain unaltered as the plan for NPS' management of Area A of the Presidio.

This EIS evaluates six alternatives, and one variant of the Final Plan in response to public comments on the Draft EIS. These alternatives are being considered for the PTMP and include: the No Action Alternative (GMPA 2000), Final Plan, Final Plan Variant, Resource Consolidation, Sustainable Community, Cultural Destination, and Minimum Management Alternatives. In accordance with Title 40 of the Code of Federal Regulations (CFR) Section 1502.4, the EIS tiers from and supplements the GMPA EIS and considers the environmental effects of proposed changes to the GMPA under each alternative. It also tiers from the Letterman Complex EIS prepared earlier by

the Trust. The Trust prepared the Environmental Screening Form (see Appendix A) to focus the EIS on issues relevant to the proposed changes.

Given the Trust's reliance on the GMPA as the foundation guiding the Trust, an updated plan is not a legal requirement. The Trust has undertaken the proposed plan update and associated EIS voluntarily as matter of policy and good governance to clarify the Trust's approach to conditions that have changed since the GMPA was adopted, and for the other reasons articulated in this chapter.

As with the GMPA and GMPA EIS, the proposed PTMP and PTMP EIS are broad, programmatic-level documents. Rather than providing an exact blueprint for Area B, the PTMP proposes a land use policy framework, including principles governing the care and management of its varied resources, preferred uses, and programs and activities that are appropriate in this national park setting. The EIS analyzes potential impacts of those concepts as they compare to the baseline No Action Alternative (GMPA 2000).

Adoption of PTMP would not constitute a commitment to any specific development projects, construction schedules, or funding priorities, but instead would establish an updated land use policy framework to guide future Trust actions. More detailed and site-specific, district-level, and/or issue-oriented plans will be developed in the future based upon the direction established in the Final Plan, and will provide additional opportunities for public involvement. Some individual projects that are consistent with PTMP could proceed immediately, likely without need of environmental review beyond the PTMP EIS. At this time, it is anticipated that these projects would primarily include (1) cultural programs and special events; (2) long-term leases involving no new construction or demolition of historic resources, where uses are identified as "preferred" within PTMP planning guidelines; and (3) natural resource restoration efforts that are consistent with both the PTMP and the VMP. Other projects are likely to include stabilization and rehabilitation of historic buildings, utilities and infrastructure improvements, transportation demand management program activities, remediation efforts, and short-term (interim) leasing.

In response to public comment on the Draft Plan and Draft EIS, additional specificity regarding future planning activities was incorporated into the Final Plan. As described in Chapter 4 of the Final Plan, major projects or follow-on

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plans must be approved separately by the Trust Board, and will themselves be subject to additional NEPA review, including public involvement, before their implementation. For project proposals involving potential demolition, new construction, or significant change to the historic landscape of the Presidio, the Trust would undertake more detailed studies and environmental analysis before project implementation. Future implementation activities would build on the PTMP, would address individual sites (e.g., potential infill housing at West Letterman), planning districts (e.g., Fort Scott), or Presidio-wide issues (e.g., parking or open space recreation management), and would provide a greater level of specificity than is included in PTMP. All of these processes would involve coordination with the NPS and other agencies as necessary, and would offer additional public participation opportunities. Public participation would be solicited early on, before projects are cast in stone. NEPA and NHPA compliance would continue to offer an important vehicle for ensuring public and agency participation in projects and plans with the potential to affect park resources.

In accordance with 40 CFR Section 1502.20, future environmental documents may summarize some of the issues discussed in this EIS or incorporate by reference certain of its discussions, while updating or providing additional levels of detail on potentially impacted resources.

1.1.1 THE PRESIDIO SITE

The 1,490-acre Presidio of San Francisco is within the GGNRA, an extensive national park that begins where the Pacific Ocean meets San Francisco Bay. Established by Congress in 1972, the GGNRA consists of a collection of parklands stretching along over 70,000 acres of San Francisco and Marin County shoreline as illustrated in Figure 1.

The Presidio is one of the country's great historic and natural sites. A military garrison for over 220 years under three different flags, the Presidio has served Spain, Mexico, and the United States of America. It has protected commerce, trade, and migration, and has played a role in every major U.S. military engagement since the Mexican-American War in 1846. Designated a National Historic Landmark (NHL) in 1962, the Presidio contains one of our country's finest collections of places, buildings, structures and artifacts related to military history, and its architecture represents every major period of U.S. military history since the 1850s.

The Presidio's distinctive resources include its historic architecture and landscapes, unique ecological systems and rare plant communities, inviting parklands, spectacular views and recreational resources. The Presidio attracts visitors who take advantage of interpretive programs and exhibits and visit the historic military sites, as well as those who enjoy the natural resources, open space and scenery. Its natural and historic setting is integrated into 500 developed acres with approximately 770 buildings providing approximately 6.1 million square feet of building space, Presidio-wide (Areas A and B). The Presidio contains offices, warehouses, and residential areas including more than 1,600 residential accommodations, utility infrastructure, retail stores, tennis courts, a bowling center, theater, swimming pool, golf course, gymnasiums and other facilities – all within a park that itself is located within the urban setting of the San Francisco Bay Area (see Figure 2).

1.1.2 FROM MILITARY POST TO NATIONAL PARK

The Presidio's transition from military post to national park began in 1972 when, in the legislation creating the GGNRA, Congress included a provision that the Presidio would become part of the GGNRA if the military ever declared the base excess to its needs. Congress designated the Presidio for closure in 1989, and in 1994 its long-time occupant, the U.S. Army, transferred jurisdiction over the Presidio to the NPS. As part of the transition, the NPS in July 1994 completed and issued a final General Management Plan Amendment GMPA laying out a vision for the Presidio's future use and management.

The GMPA set general land use policies for 13 distinct Presidio Planning Districts to guide visitor use, cultural and natural resource management, development, and operation of the Presidio. The plan called for 348 historic buildings to be rehabilitated for new uses, and 276 buildings totaling 1.5 million square feet to be removed. The GMPA envisioned both public and private organizations establishing a mix of uses at the Presidio, with an emphasis on organizations with missions related to environmental, social, and cultural issues.

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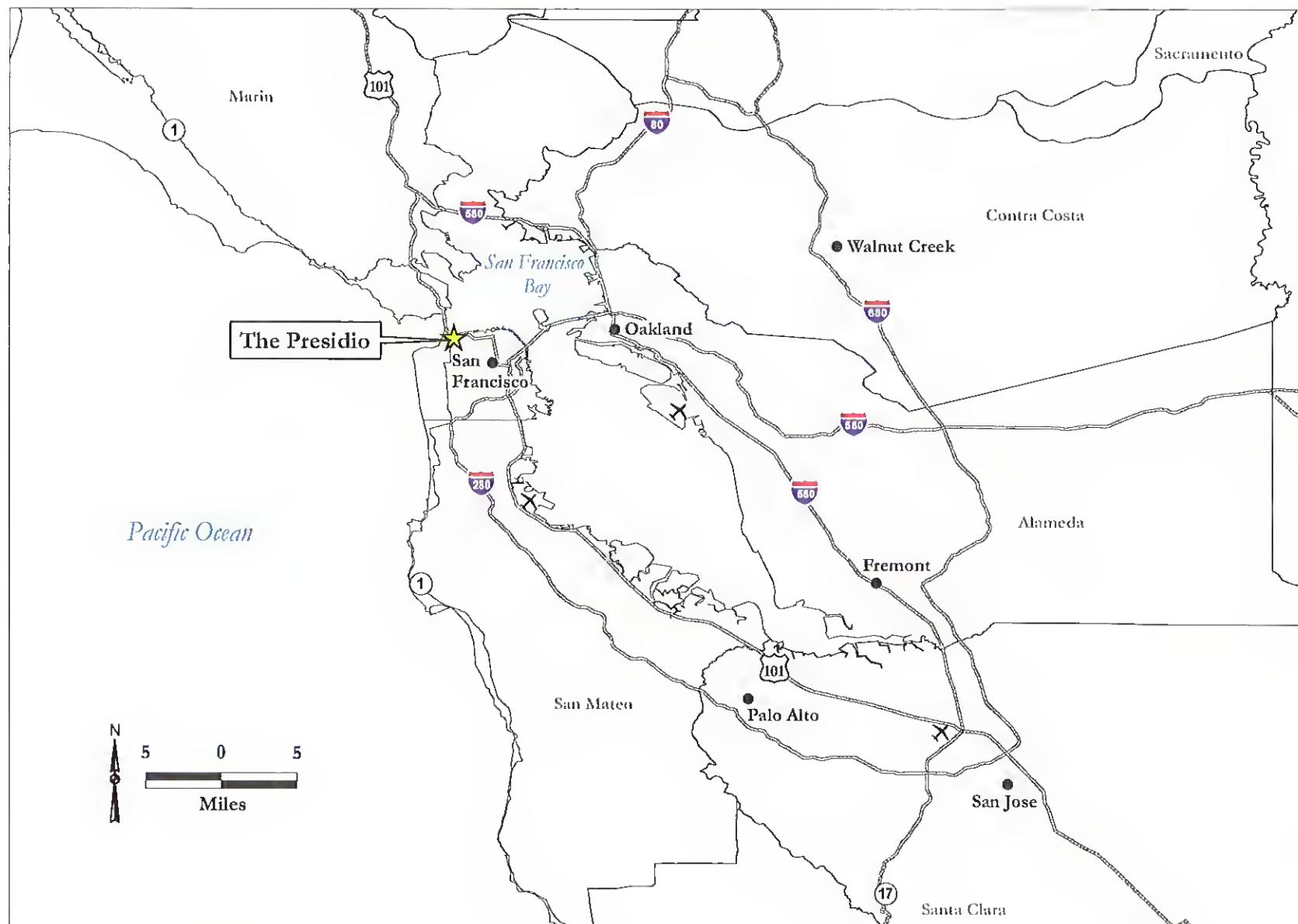


Figure 1: Regional Context

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1. Main Post 3. Letterman 5. Public Health Service Hospital 6. East Housing
2. Crissy Field (Area B) 4. Fort Scott 7. South Hills

Figure 2: Existing Setting

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Once the GMPA was in place, difficult questions about how to carry out the plan remained. NPS recognized that implementing the GMPA would require innovative approaches and unique authorities to manage activities outside of NPS's expertise, such as building leasing, property management, and real estate finance. As the United States Congress debated the creation of a new managing entity, estimates of costs to implement the GMPA showed the Presidio to be by far the most expensive park managed by NPS. NPS estimated annual costs at \$40 million, and capital improvement cost estimates ranged from \$490 million to \$741 million. In view of these projections, Congress was unwilling to commit the federal monies needed over the long term to improve, protect, and maintain the Presidio, but instead created an innovative entity charged with achieving these goals.

1.1.3 THE PRESIDIO TRUST AND ITS UNIQUE MANDATE

In 1996, Congress established the Trust pursuant to the Trust Act (16 U.S.C. 460bb Appendix). In response to competing public policy goals, Congress gave the Trust the unique responsibility of reducing and eventually eliminating the costs of the Presidio to the federal government while retaining the Presidio within the GGNRA. To achieve these goals, Congress provided for limited federal funds, which would incrementally decrease to zero over 15 years, and provided no appropriated funds targeted for needed capital expenditures. The Trust is a wholly-owned federal government corporation whose purpose is to preserve and enhance the Presidio as a national park while ensuring that the Presidio becomes financially self-sufficient by 2013. Although it did not provide full funding, Congress granted the Trust unique authorities to accomplish the Trust Act's goals. The Trust may generate and retain revenue and borrow money up to a limited amount to finance repair and rehabilitation of the Presidio's historic structures. The Trust assumed administrative jurisdiction over about 80 percent of the Presidio (Area B) on July 1, 1998; NPS retains jurisdiction over the coastal areas (Area A) (see Figure 2).

The Trust is managed by a seven-person Board of Directors. Six members are appointed by the President of the United States, and the seventh member is the Secretary of the Interior or the Secretary's delegate. The Trust is managed by an Executive Director and a professional staff with diverse experience and expertise in real estate leasing, finance, development, property management,

park stewardship, and natural resource protection and management. Pursuant to the Trust Act, NPS, in cooperation with the Trust, provides visitor services and interpretive and educational programs throughout the Presidio. The NPS Park Police also provides public safety services under a contractual arrangement with the Trust.

1.1.4 THE PRESIDIO TODAY

The Presidio today provides evidence of how the site has been occupied, developed, and shaped over time. The Presidio contains approximately 770 buildings, of which 730 are managed by the Trust; over half of these are historic. A large amount of built space is used as office and warehouse storage. The Presidio also contains over 1,600 residential accommodations in almost 400 buildings. These accommodations range from large single-family homes to apartment complexes and barracks. Community and visitor facilities include chapels, a child care center, post office, the NPS Visitor Center, meeting facilities, and tennis courts, gymnasiums, a bowling center, a theater, a swimming pool, a golf course, and a number of small playgrounds and athletic fields. These facilities support a community of residents and employees of the various organizations located in the Presidio. The Trust operates or oversees the Presidio's electric, water, wastewater collection, storm drain, and refuse collection services. Ongoing infrastructure repairs and improvements are intended to make the Presidio a state-of-the-art demonstration site for innovative technologies, such as a micro-cogeneration for generating electricity, a recycled water system to meet landscape irrigation needs, and advanced telecommunications and innovative data transfer technologies to support uses at the park.

Dramatic geological formations, a favorable climate, rich water resources and protected open space have contributed to the site's rich biological diversity. As the surrounding areas have become more urban, the Presidio has provided critical refuge for plants and wildlife. Rare plant communities that have disappeared in the rest of the San Francisco peninsula survive within the 1,490-acre Presidio reservation. These remnant native plant communities preserve rare and endangered plant species and provide valuable wildlife habitat. They include serpentine grasslands where wildflower and grass species flourish; the last remnants of dune communities that once covered what is now the city of San Francisco; and riparian and wetland communities including Lobos Creek, the best example of a native riparian community in

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the city. The Presidio contains a number of rare plants including Raven's manzanita, which has been saved from extinction through the GGNRA's plant propagation program. Other important natural resources include the still visible drainages at Mountain Lake, Lobos Creek, Tennessee Hollow, and the newly restored tidal wetland at Crissy Field.

The Presidio also provides an exceptional recreational resource within a major metropolitan area. It offers opportunities for a wide range of active pursuits as well as places for solitude and retreat. Sites throughout the Presidio provide spectacular vistas of the Pacific Ocean, the Golden Gate, the Marin Headlands, San Francisco Bay, and the skyline of San Francisco. Visitors enjoy walking, jogging, biking, sightseeing, surfing and wind surfing, sailing, fishing, and learning about the Presidio's history and environment. Others participate in an active stewardship program focused on preserving and restoring the park's natural systems.

1.2 PURPOSE AND NEED FOR THE PLAN UPDATE

The purpose of the proposed *Presidio Trust Management Plan – Land Use Policies for Area B* of the Presidio of San Francisco (PTMP) is to provide a land use policy framework to guide the Trust's implementation of the Trust Act by updating the management concepts and land use proposals of the 1994 GMPA for the area of the Presidio under the Trust's jurisdiction. The PTMP is needed to provide a planning framework that is well-suited to and consistent with the requirements of the Trust Act, to address changed conditions that have occurred since the GMPA was completed, and to allow the Trust to be responsive to new opportunities as they arise, taking into account the Trust's mandate to be financially self-sufficient while retaining as much as practicable from the GMPA.

Trust Act Requirements – In 1996, two years after the NPS finalized and adopted the GMPA for the Presidio, Congress set new requirements for Area B. The GMPA assumed the Trust would be established under the Department of the Interior with the NPS retaining primary responsibility for the Presidio's management. Instead, Congress created the Trust as a wholly-owned federal government corporation, transferred the Secretary of the Interior's administrative jurisdiction to the Trust for all of Area B, and required conformity only with the purposes of the GGNRA Act and with the General Objectives of the GMPA.

PTMP is needed to create an updated policy framework that takes into account the concepts and principles of the GGNRA Act and GMPA, balances them with the newly enacted superseding statutory requirements of the Trust Act, and brings them into conformity with the new and additional mandates of the Trust Act. The Trust must manage its portion of the Presidio in such a way as to become financially self-sufficient with respect to both annual operations and long-term needs. Beginning no later than Fiscal Year 2013, the Trust must generate sufficient revenues from Area B to sustain the park resources and operations in perpetuity, including the necessary building and infrastructure-related capital improvements and funding replacement reserves.

In addition, the Trust Act also requires consideration of a number of other factors that the GMPA did not. Removal and/or replacement of some structures must be considered as a management option in administering Area B. In managing and leasing properties, the Trust must give priority to those tenants that enhance the financial viability of the Presidio and facilitate the cost-effective reuse of historic buildings. Other requirements include obtaining reasonable competition in leasing, considering the extent to which prospective tenants contribute to the reduction in cost to the federal government, and bringing all Area B properties into compliance with federal building codes and regulations. All of these requirements and others are to be accomplished while managing the Presidio so as to protect it from "development and uses which would destroy the scenic beauty and historic natural character of the area and cultural and recreational resources." The plan update is needed therefore not only to carry out the new financial requirements but also to balance management and leasing activities with the resource protection mandate of the Trust Act.

Changed Conditions – The proposed plan update is also needed to reflect changes that have occurred since 1994, including progress that has been made towards implementation of the GMPA. Almost as soon as the GMPA became final, the financial assumptions underlying the GMPA changed significantly. As examples, in enacting the Trust Act, Congress rejected the GMPA idea of a continuing annual federal appropriation for the Presidio of between \$16 to \$25 million. The GMPA had assumed that this federal appropriation would continue. The updated plan is needed to ensure lost federal appropriations can be generated from leasing or other sources. Also, the GMPA assumed substantial philanthropic contributions. While NPS has received some

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philanthropic funding for activities in Area A under NPS jurisdiction, only limited donations have been received for activity in Area B. The Trust will continue to pursue such funding, however, donations cannot be guaranteed, and the updated plan is needed to ensure other sources for these assumed funds should they fail to materialize. Similarly, a number of leases were adopted, including several early NPS leases with non-profit organizations on terms that provide for minimal long-term revenues. Most of the early lease transactions provided that tenants would rehabilitate and occupy buildings, although they could contribute only minimal rent to support ongoing operations. The plan update is needed to reflect this new information on lease revenues and to ensure the Trust Act's tenant selection and financial requirements are met.

The GMPA assumed that the Sixth U.S. Army would continue to use approximately 30 percent of the Presidio's square footage of building space, including about half the available housing. The Sixth Army's presence was anticipated to be a significant benefit to the Presidio; the Sixth Army was to pay for direct expenses for buildings, facilities and other occupied property, and share the operating expenses common to Presidio tenants. Shortly after NPS completed the GMPA, however, the Department of Defense decided to move the Sixth U.S. Army and to vacate the Presidio permanently. The Army's departure had a dramatic effect on the GMPA's financial and building occupancy projections. The GMPA assumed that the Sixth U.S. Army would occupy 277 buildings, comprising 1.8 million square feet of residential and non-residential building space (totaling 30 percent of the Presidio square footage), for an indefinite period, but the Army had largely departed the Presidio by 1994. The plan update is needed to ensure housing and residential leasing policies are current and reflect the Army's departure.

Other land use concepts presumed in the GMPA have also not been supported by existing conditions or market demand. For example, the proposed use for the Letterman Complex as a health science, research, and education center could not be realized when the intended user, the University of California at San Francisco (UCSF), failed to conclude a lease agreement with NPS prior to enactment of the Trust Act. An alternate user wishing to establish a digital arts and design center at the site was considered and selected by the Trust. Similarly, the conference center and residential education use contemplated under the GMPA for the Public Health Service Hospital site was not

supported by market demand or actual market offerings when such users were solicited by the Trust in 1999. The plan update is needed to ensure that market factors are taken into account when considering uses and to ensure a diversity of tenant types.

Prior to creation and full operation of the Trust, other decisions were made altering the land use designations in the GMPA. As examples, the NPS altered the GMPA land use plan by deciding to abandon Building 35 as a comprehensive public safety facility, and instead to split police and fire services by rehabilitating and constructing an addition to the Presidio fire station. The GMPA was also altered by the NPS in implementing later phases of the Thoreau Center for Sustainability which led to the reuse of the buildings along O'Reilly Avenue for offices rather than lodging as prescribed by the GMPA. The plan update is needed to ensure sufficient plan versatility to allow consideration of alternative or changed uses, when appropriate.

Since the Army's departure and the establishment of the Presidio Trust, the Trust has renovated and put back into use the remaining Wherry Housing (Baker Beach Apartments) on a short-term basis. The Trust's re-activation of this housing yielded important rental revenues in the Trust's start-up years and afforded a broader mix of housing options for Presidio employees. The plan update is needed to reconsider housing approaches and policies for the Presidio.

The PTMP planning effort is needed to assess changed conditions, reconsider and update the GMPA's market clusters concepts, and provide revised land use concepts for the Presidio that can accommodate changing opportunities and market conditions. A more flexible plan than the GMPA was needed by the Trust so that a plan amendment would not be required each time a change in a land use designation or building treatment specified by the GMPA occurred due to unforeseen conditions, the market, or a new opportunity.

New Policies and Management Approaches – Because of the Trust Act's financial self-sufficiency requirement, the Trust cannot be assured of continuing federal financial support for the Presidio's long-term operation and protection. There is, therefore, a greater need to consider and take into account market principles, financial uncertainties, and changing economic conditions. Markets and financial conditions are inherently unpredictable, offering certainty only in the existence of periodic cycles, with some periods

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of economic strength followed by inevitable downturn. Implementation of the GMPA was based upon the slumped real estate market conditions existing in 1994 as projected through the 1990's. At the time, no one foresaw the surge in the San Francisco real estate market nor the current economic downturn following almost 6 years of unprecedented economic growth. Growth throughout the late 1990s has put stress upon the regional housing market, and created new business demands that could not have been foreseen in 1994 when the GMPA was being developed. The plan update is needed to more adequately address these and similar market changes that could occur over time.

The Trust needed to revise the governing plan for Area B in order to plan and manage for financial uncertainty. Even after new financial projections are developed, the Trust can neither be sure of the timing of cash flow, the availability of tenants, or of expected financial outcomes.¹ In the GMPA, as elsewhere, NPS chose to establish a highly specific and prescriptive plan. The NPS then sought monies through the federal appropriations process to fund implementation of the plan in all of its specific prescriptions. The Trust, on the other hand, has been given a mandate that must be met largely without federal funding. The Trust's plan must, therefore, apply market principles and balance market opportunities and conditions with the programmatic and resource goals of the plan. Thus, there is an inherent need for a plan which allows the Trust to remain flexible in managing its resources for the long-term.

At times, the Trust may not be able to conclude a financially viable transaction on an otherwise desirable project because of, for example, obsolete building configurations, tenant needs, or other factors. In some of these

circumstances, the Trust may wish to consider other options such as alternate uses, a change in location, or possible building demolition with new replacement construction. At other times, apparently favorable projects may have to be deferred, changed or foregone because of financial factors such as cash flow concerns or market conditions. Market demand could fail to deliver an intended use, or changed market conditions could require a different approach to leasing or financing that better addresses the existing market opportunities or realities at the time. The Trust needs the flexibility of a programmatic, rather than prescriptive plan to respond to market factors like these. The PTMP is intended to provide this flexibility, while ensuring that an overarching policy framework is established for Area B to guide future activities in a manner consistent with the Presidio's national park status.

The Trust was created in part to bring to bear a depth of professional experience and special skills in property management, financing, leasing, and building restoration. The plan update is needed to guide the appropriate application of this expertise in the overall pursuit of the GGNRA Act purposes and the GMPA's General Objectives.

1.3 OBJECTIVES OF THE PLAN UPDATE

In order to satisfy the purpose and need for this planning process, the Trust has identified the following objectives for the planning update process. The planning update process is intended to result in a plan that meets these objectives to the fullest extent possible.

1.3.1 *CONSISTENCY WITH TRUST ACT RESOURCE MANDATES*

Among the legislated goals of the Trust are the preservation and enhancement of the Presidio's "outstanding natural, historic, scenic, and recreational" resources for public use. The Trust must achieve its legislated resource goals by managing Presidio resources to become financially self-sustaining. Many of the Trust Act requirements differ from those that NPS must meet in other areas of the GGNRA under its administrative jurisdiction, and were not anticipated or addressed by the GMPA when it was developed by the NPS in 1994. The Trust Act requirements are a necessary element of the Trust's operations, and therefore must be addressed by the plan update.

¹ The financial model used during the PTMP planning process was developed for a limited purpose and its projections therefore are of limited utility. It is axiomatic that the longer the projection period (in this case 30 years), the less reliable the result. For this reason, the PTMP financial model was designed using many common assumptions so as to allow a fair and accurate comparison among planning alternatives rather than as a precise predictor of future financial results, and should not be relied upon as a future budget goal or constraint. Financial conditions will continue to be forecast and updated during the Trust's budgeting process and financial progress will be continually monitoring and assessed.

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The Trust Act sets forth two overall requirements of the Trust. First, the Trust must manage the leasing, maintenance, rehabilitation, repair and improvement of property within Area B of the Presidio in accordance with the purposes set forth in the GGNRA Act (Public Law 92-589, 86 Stat. 1299; 16 U.S.C. § 460bb). Second, the Trust must manage the leasing, maintenance, rehabilitation, repair and improvement of property within Area B in accordance with the purposes of the GGNRA Act and the “general objectives” of the GMPA.

The purposes of the GGNRA Act are clear and are stated in its preamble as follows:

In order to preserve for public use and enjoyment certain areas of Marin and San Francisco Counties, California, possessing outstanding natural, historic, scenic, and recreational values, and in order to provide for the maintenance of needed recreational open space necessary to urban environment and planning, the Golden Gate National Recreation Area is hereby established. In the management of the recreation area, the Secretary of the Interior shall utilize the resources in a manner which will provide for recreation and educational opportunities consistent with sound principles of land use planning and management. In carrying out the provisions of this Act, the Secretary shall preserve the recreation area, as far as possible, in its natural setting, and protect it from development and uses which would destroy the scenic beauty and natural character of the area.

The general objectives of the GMPA, which are not precisely identified either within the text of the GMPA itself or by Congress in the Trust Act, have been determined by the Trust and set forth in Trust Board Resolution No. 99-11, dated March 4, 1999 (General Objectives). The following are identified as the General Objectives:

1. To preserve and (where appropriate) enhance the historical, cultural, natural, recreational, and scenic resources of the Presidio;
2. To address the needs of Presidio visitors, tenants and residents for community services such as transportation, water, power, waste

management, and public safety (among others) in an environmentally responsible manner, while respecting neighboring communities;

3. To increase open space, consolidate developed space and provide for appropriate uses of the Presidio, including uses that involve stewardship and sustainability, cross-cultural and international cooperation, community service and restoration, health and scientific discovery, recreation, the arts, education, research, innovation and/or communication; and
4. To sustain the Presidio indefinitely as a great national park in an urban setting.

Although the Trust is not required to follow the specifics of the GMPA, the requirement to adhere to its General Objectives underscores the importance of the GMPA as a foundation of the Area B plan update.

I.3.2 CONSISTENCY WITH TRUST ACT FINANCIAL MANDATES

In enacting the Trust Act, Congress stated in Section 101 (7) of the Act that the “Presidio will be managed through an innovative public/private partnership that minimizes cost to the United States Treasury and makes efficient use of private sector resources.” This charge requires the Trust to manage Area B of the Presidio in such a way as to become financially self-sufficient in both the short-and long-term. In other words, the proposed plan must provide a framework under which the Trust can generate sufficient revenues to support Area B operations over the short-term without annual Congressional appropriations, which will end in FY 2013. To be fully responsive to the financial self-sufficiency goal requires more than revenues exceeding expenses at any point in time. Long-term financial sustainability, an aspect of self-sufficiency, requires generating sufficient revenues over and above operating expenses to fund all capital needs and future replacements or upgrades of the Presidio’s infrastructure and natural and built environment. Routinely, some monies must be invested into the capital replacement fund to plan for the Presidio’s future care into perpetuity. A successful plan must achieve financial self-sufficiency in both the short-and long-term.

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1.3.3 FLEXIBILITY TO RESPOND TO MARKET CHANGES AND OPPORTUNITIES

Because markets and financial conditions are inherently unpredictable, the Trust must have a plan to manage financial uncertainty. The Trust cannot be sure of the timing of cash flow, the availability of tenants, or of expected financial outcomes. The Trust seeks to affirm a plan that ensures the Trust can meet the legislated mandate for financial self-sustainability. The plan must provide sufficient flexibility in its land use and programmatic concepts to allow the Trust to be responsive to changing conditions, market conditions and demand, and new opportunities as they arise. With flexibility will come a commitment to seek continuing public input on proposals for change and to undertake site-specific and district-level planning efforts and environmental analysis as needed in the future. Please refer to Chapter 4 of the Final Plan for additional information on future review.

1.3.4 CONSISTENCY WITH PLANNING PRINCIPLES AND GUIDELINES

The plan must set forth planning principles that translate the overall vision of the plan into specific goals for managing Area B. As a result, the Planning Principles and District Guidelines set forth in the Final Plan have been developed, and subsequently refined through public comment, with the intent that they would apply to each and any plan alternative under consideration. The Planning Principles are intended to articulate the essential management objectives that will be applied as the plan is implemented. The District Guidelines correspond to the varied characteristics of each district and provide guidance on the treatment of open space, district character, views, access and circulation and other physical characteristics. The District Guidelines were established to conform to the Secretary of the Interior's standards. The plan must establish consistency with its Planning Principles and District Guidelines as a prerequisite for future decisions and activities.

1.3.5 CLEAR RELATIONSHIP WITH EXISTING PLANS AND CONSIDERATION OF PUBLIC INPUT

The plan for Area B is an update of the GMPA, and is not starting from a blank planning program; it is intended to encompass many of the concepts and area plans of the GMPA while modifying others as warranted. The Trust

seeks to approve a plan that retains and builds upon many of the park-wide principles and land use elements of the GMPA. The Trust also seeks to approve a plan that has been reviewed by the public and provides a continuing role for the public in the Presidio's future.

1.3.6 HOUSING

Growth throughout the last decade has put stress on the regional housing market. Given the regional housing context, the Trust seeks to approve a plan that addresses the demand for housing and reduces spillover impacts on the City of San Francisco's housing supply. Providing housing preferences for Presidio employees is a further plan objective, and transportation demand management strategy.

1.3.7 DESIRED TENANTS

As required by Trust Act section 104(n), the plan must give priority to tenants that enhance the financial viability of the Presidio, and must consider the extent to which prospective tenants contribute to the reduction in cost to the federal government. Further, the terms and conditions of leases must meet other economic requirements of the Trust Act, including the recovery of the Trust's costs to pay for health, safety, and infrastructure services.

The GMPA identifies potential partners or tenants for the Presidio as those involved in education, arts, scientific research, environmental studies, scientific inquiry, healthcare, philanthropy, conflict resolution, and international relations. To address the additional Trust Act tenant selection requirements and changed economic opportunities since 1994, a fully successful Area B plan will allow the Trust to consider and offer tenancies to a wide range of potential tenants.

1.3.8 PROGRAMS AND PUBLIC USE

Public use and enjoyment of the Presidio are essential to its success and future as a national park. Public programs and uses encompass a broad range of community and public events and activities, including educational and learning centers, youth activities, special events, hands-on demonstrations, museums and exhibits, festivals, celebrations, and enhanced interpretation programs. The Trust seeks to adopt a plan that results in a wide array of public programs and uses, not only NPS interpretive programs and programs

provided and funded by mission-based tenants, but also programs delivered and paid for by general Trust revenues and programs delivered and paid for through collaborations with organizations and partners outside the Presidio.

1.3.9 HISTORIC COMPLIANCE

The Trust's goal is to develop and adopt a plan that acknowledges the importance of the historic resources within Area B of the Presidio, ensuring the protection of the NHL status of the Presidio. The Trust seeks a plan that will aid in compliance with the NHPA, and adhere to the provisions of the Trust Act.

1.3.10 ENVIRONMENTAL SUSTAINABILITY

Both the General Objectives of the GMPA and the GMPA itself establish sustainability as a key goal. The Trust seeks a plan that considers and can accommodate the balance between economic, social, and environmental issues in its framework. To achieve environmental sustainability, the plan must meet the current needs of the park without compromising the quality of the park experience for future generations. The principle of environmental sustainability is a foundation upon which planning for the Presidio is built.

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2. ALTERNATIVES

This section describes the range of plan alternatives that are presently being considered by the Presidio Trust. Six alternatives and one variation of the Final Plan alternative which was recommended by several environmental organizations during the public review period on the Draft EIS, are described and evaluated in this EIS.

These alternatives are:

1. No Action Alternative [General Management Plan Amendment (GMPA) 2000]
2. Final Plan Alternative (proposed action) and Final Plan Variant
3. Resource Consolidation Alternative
4. Sustainable Community Alternative
5. Cultural Destination Alternative
6. Minimum Management Alternative

2.1 DEFINING THE NO ACTION ALTERNATIVE

The No Action Alternative reflects what would happen if the proposed action was not taken. This alternative has been developed based upon "Alternative A" as it was finalized under the 1994 GMPA and GMPA EIS. In formulating the No Action Alternative, the Trust has remained as close to the actual 1994 GMPA land use assumptions as present circumstances will allow. However, specific events and changes since 1994 make it impossible to rely upon the GMPA alternative exactly as it was described in the Final GMPA and associated EIS. Primary differences between the 1994 GMPA and the updated "GMPA 2000" Alternative include the following:

- Under the 1994 GMPA, 277 buildings, representing approximately 1.8 million square feet (sf) of building space, would continue to be occupied by the Sixth U.S. Army. These figures include nearly 600 residential dwelling units assumed to be rented long-term to the Sixth U.S. Army and about another 70 units assumed to be occupied by the NPS at below

market rents. Updated market rate rents are assumed in the financial analysis for this building space in the No Action Alternative (GMPA 2000).

- The 1994 GMPA was influenced by the slumped market conditions in the early 1990s. Office rents were assumed to be approximately \$18 per square foot and office employment densities were assumed to be low. Updated market rate rents and more reasonable employment densities are assumed for non-residential and other types of space in the No Action Alternative (GMPA 2000).
- Under the 1994 GMPA, Wherry housing would be occupied by the Sixth U.S. Army and demolished when no longer needed by the Department of Defense (DOD). Since the 1994 closure of the base, the Army has vacated the Presidio, and the Presidio Trust has leased these units to others. The financial model assumes for the No Action Alternative (GMPA 2000) that revenues are generated from the leasing of Wherry housing for approximately 10 years before it is removed at the end of the GMPA plan horizon. Updated market rate rents are assumed for these units in the No Action Alternative (GMPA 2000).
- Under the 1994 GMPA, the Golf Course was assumed to stay under Sixth U.S. Army management and the Letterman Complex was assumed to be leased to a scientific research user. The No Action Alternative (GMPA 2000) is updated to reflect the revenues and employment associated with the leasing of the Golf Course Clubhouse, the 23-acre Letterman Digital Arts Center (LDAC) long-term lease, and other existing long-term leases.

2.2 COMMON FEATURES

All alternatives share some common features or were assumed to result in common outcomes. The common features arise from a mix of circumstances. Most basically, they are derived from the GMPA. That plan outlined a future for the Presidio whose general objectives, by Congressional direction, continue to guide the Trust. Some (e.g., LDAC, Doyle Drive improvements, the Mountain Lake enhancement project, the Vegetation Management Plan, the Trails and Bikeways Master Plan) reflect projects that have been the subject of independent planning and environmental review proceeding

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separately, sometimes under an alternate authority or jurisdiction. Others reflect prior or existing contractual commitments, requirements of the Trust Act, or requirements of other laws, which are consistent with all planning options (e.g., existing long- or short-term leases, building rehabilitations, environmental remediation activities, establishment of the William Penn Mott, Jr. Visitor Center, NPS law enforcement and interpretive roles). Some reflect policies and actions from the GMPA that the Trust has been implementing and believes remain viable (e.g., provision of transportation demand management approaches, removal of Wherry housing units, targeting housing to Presidio-based employees). These policies and actions are common to all alternatives although they would only be minimally addressed under the Minimum Management Alternative.

The following assumptions are common to all alternatives including the Minimum Management Alternative unless noted.

2.2.1 LAND AND BUILDING USES

- Approximately 900,000 sf of new structures for the LDAC project would replace the 10-story former hospital and research buildings within a 23-acre site in the Letterman Planning District as previously analyzed in the Final EIS and Planning Guidelines for the Letterman Complex.
- Existing long-term leases would remain in place.
- Other planning, leasing, and construction projects currently underway would be completed and would be subject to separate environmental analysis.
- Housing would be targeted to Presidio-based employees.
- As provided for in the GMPA, Wherry housing would be removed to increase open space and restore critical habitat (except in the Minimum Management Alternative).
- Historic building rehabilitation would be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (also see Section 2.2.4).

2.2.2 TRANSPORTATION

- Proposed improvements would replace Doyle Drive with a facility that would have a new, direct entrance into the Presidio as identified in the 1994 GMPA. The Doyle Drive improvements are the subject of a separate EIS/EIR being prepared by the Federal Highway Administration, Caltrans, and the San Francisco County Transportation Authority (SFCTA).
- The proposed improvements to Richardson/Gorgas Avenue analyzed in the 23-acre Letterman Complex EIS would be made; in addition, signalization and intersection improvements at the Lombard Gate analyzed in the Letterman Complex EIS would be implemented.
- Transportation policies and projects directing efforts to strive for better mobility within the park, increased use and availability of public transit and pedestrian and bicycle travel options, improved safety, and actions to minimize congestion would be implemented. Use of the alternative-fuel internal shuttle (connecting to both MUNI and Golden Gate Transit bus lines) will continue, and construction of a transit hub in the northern part of the Main Post would be completed.
- Transportation demand management (TDM) measures as called for in the GMPA and currently underway would continue to be implemented to encourage alternative modes of transit to the Presidio. An enhanced TDM program would be implemented in all but the No Action Alternative (GMPA 2000) and Minimum Management Alternatives, as described in the Final Plan.

2.2.3 NATURAL RESOURCE RESTORATION & ENVIRONMENTAL REMEDIATION

- Since release of the Draft EIS, the Presidio Trust has signed a letter of agreement with the NPS and GGNPA to undertake a technical study to identify a broad array of options for Crissy Marsh expansion and to set forth the benefits, costs, impacts and trade-offs associated with each option. The study area includes land in both Areas A and B and focuses on the potential for expansion in areas that were once tidal marsh. For the

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next two years (the estimated duration of the study), the Trust will not undertake any new construction or long-term leasing in the immediate study area which is east of the Commissary parking lot.

- As provided for in the 1994 GMPA, the Tennessee Hollow riparian stream corridor would be restored to the extent feasible following further study and environmental review (except in the Minimum Management Alternative).
- The biological health of Mountain Lake would be improved as identified in the October 2000 *Mountain Lake Enhancement Plan* and Environmental Assessment.
- Vegetation resources would be protected and enhanced as identified in the Presidio *Vegetation Management Plan* (VMP) (except for differences as noted in each alternative).
- Remediation of hazardous substances, pollutants, and contaminants at the Presidio would occur in accordance with the Environmental Remediation Agreement developed between the Trust, NPS, and the U.S. Army.
- Lobos Creek would continue to be the primary water resource for the Presidio.
- Rare, threatened, and endangered species would be protected.

2.2.4 CULTURAL RESOURCES

- Any new (replacement) construction would be limited to existing areas of development.
- The character and integrity of the NHLD would be protected and retained through conformance with the PTMP Planning District Guidelines (Appendix B) which were developed to conform to *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (except in the Resource Consolidation Alternative).

- As provided in the 1994 GMPA, the Main Post parade ground would be restored to the extent feasible (except in the Minimum Management Alternative).
- The San Francisco National Cemetery would continue to be managed by the Department of Veteran Affairs as a designated memorial landscape in its current configuration.
- Significant Presidio collections would be preserved and protected.

2.2.5 VISITOR EXPERIENCE

- The NPS would continue, in cooperation with the Presidio Trust, to provide interpretation and education services in accordance with the Presidio Trust Act. A Presidio interpretation strategy, jointly prepared by the NPS and the Presidio Trust, would lay out the framework for interpretive activities, facilities, and programs.
- The William Penn Mott, Jr. Visitor Center would continue to be operated by NPS as the main visitor orientation and contact point. Other existing facilities and sites used for providing visitor programs, such as the Presidio's Officers' Club, the Crissy Field Center, and the Herbst Exhibition Hall would continue to be used for this purpose.
- The Presidio and its facilities would be made accessible to visitors of all ages, backgrounds, and abilities as required by the Uniform Federal Accessibility Standards and the Americans with Disabilities Act.

2.2.6 RECREATION

- Scenic views and vistas would be preserved and enhanced, in accordance with the VMP.
- The Presidio Golf Course, studied in the Presidio Golf Course Clubhouse Environmental Assessment, would continue to be open to the public.
- A park-wide trail network for pedestrians and bicyclists would be established following public review and agency adoption of the *Presidio*

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Trails and Bikeways Master Plan and Environmental Assessment, now in preparation by the Trust and NPS.

- Julius Kahn Playground would continue to be managed by CCSF as a city park.

2.2.7 SERVICES/INFRASTRUCTURE

- The Presidio's infrastructure (telecommunications, transportation, electric, sanitation, and sewer systems) would continue to be upgraded to serve park tenants and generate revenue.
- The recently rehabilitated water treatment plant would continue in operation to service the Presidio.
- Law enforcement, fire prevention and protection, and emergency services would continue to be provided by the NPS, under contract to the Trust.
- A water recycling system for on-site treatment of wastewater would be pursued subject to separate environmental review. In March 2002, the Trust released the *Presidio Water Recycling Project Environmental Assessment* (EA) for public review and comment. The proposed water recycling system would have an ultimate capacity of 500,000 gallons per day (gpd), with the first phase (200,000 gpd) proposed for implementation by the end of 2003.
- Conservation practices (energy, water, etc.) would be implemented and demonstrated.

2.2.8 ADMINISTRATION

- Facilities necessary for critical park operations would be set aside for Trust and NPS use. These would include facilities for essential operational needs such as public safety, Presidio collections, and a native plant nursery.

- The Trust would manage the leasing and financing programs for Area B and negotiate and enter into leases and other contractual arrangements needed to implement the plan.

2.3 KEY DIFFERENCES AMONG THE ALTERNATIVES

Table 1 describes key distinguishing elements of the alternatives and Table 2 provides a financial comparison of the alternatives. Differences among the alternatives include:

- amount and type of open space;
- retention or loss of dwelling units;
- total building square footage and land-use emphasis, including variances in type, density, level of potential demolition, and possible replacement construction;
- level of resource enhancement;
- population and job totals;
- estimated capital costs (orders of magnitude estimates based on common assumptions regarding third party and Trust financing);
- estimated timing of completion of capital improvements and time required to set aside financial reserves (based on common assumptions); and
- extent of park programming and approach to achieving park programs.

2.4 NO ACTION ALTERNATIVE (GMPA 2000)

2.4.1 CONCEPT

This alternative would implement the 1994 GMPA for the Presidio assuming year 2000 conditions, as described in Section 2.1. Tenants and residents would work together to create a global center dedicated to addressing the world's critical environmental, social, and cultural challenges. Cultural and natural resources throughout the Presidio would be protected and enhanced and new programs would be established through public/private partnership. Historic buildings and landscapes that distinguish the NHLD would be rehabilitated and adaptively reused. Buildings would be removed to increase open space and/or enhance recreational, cultural, and natural resources.

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Table 1 Comparison Of Alternatives

	Current (2001)	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Open Space (Area B) :								
Native Plant Communities	70	210	212	215	213	209	207	70
Historic Forest	200	252	252	252	252	252	252	200
Landscape Vegetation	301	332	330	352	373	311	348	308
Disturbed	124	--	--	--	--	--	--	124
<i>Subtotal</i>	695	794	794	819	838	772	807	702
Total	1,168							
BUILDINGS (sf)								
Existing Square Footage	5,960,000	5,960,000	5,960,000	5,960,000	5,960,000	5,960,000	5,960,000	5,960,000
Maximum Demolition	0	1,120,000	1,070,000	1,250,000	1,910,000	890,000	1,370,000	0
Maximum Replacement Construction	0	170,000	710,000	0	1,250,000	620,000	1,370,000	0
Total	5,960,000	5,010,000	5,600,000	4,710,000	5,300,000	5,690,000	5,960,000	5,960,000
Cultural/Educational	140,000 (2%)	580,000 (12%)	920,000 (16%)	660,000 (14%)	690,000 (13%)	850,000 (15%)	960,000 (16%)	140,000 (2%)
Lodging/Conference	20,000 (1%)	540,000 (11%)	260,000 (5%)	190,000 (4%)	320,000 (6%)	290,000 (5%)	450,000 (8%)	30,000 (1%)
Other Non-Residential	3,370,000 (56%)	2,570,000 (51%)	2,450,000 (44%)	2,380,000 (51%)	2,980,000 (56%)	2,640,000 (46%)	2,660,000 (45%)	3,360,000 (56%)
Residential	2,430,000 (41%)	1,320,000 (26%)	1,960,000 (35%)	1,480,000 (31%)	1,310,000 (25%)	1,910,000 (34%)	1,890,000 (32%)	2,430,000 (41%)
Total	5,960,000 (100%)	5,010,000 (100%)	5,600,000 (100%)	4,710,000 (100%)	5,300,000 (100%)	5,690,000 (100%)	5,960,000 (100%)	5,960,000 (100%)
HOUSING (units)								
Houses / Apartments	1,110	510	1,300	970	870	1,190	1,430	1,110
SRO / Dorm Rooms	540	260	350	140	40	240	270	540
Total	1,650	770	1,650	1,110	910	1,430	1,700	1,650
PROJECTED RESIDENTS	2,250	1,660	3,770	2,630	2,230	3,330	3,990	3,600
PROJECTED EMPLOYEES	2,020	6,460	6,890	6,630	8,480	7,520	7,840	7,820
PROJECTED VISITORS								
Avg. Daily	12,600	14,300	19,600	16,100	19,100	22,400	19,800	17,900
Annual	4.6M	5.2M	7.2M	5.9M	7.0M	8.2M	7.2M	6.5M
PARKING (spaces)	11,210	7,810	9,170	7,830	8,980	9,790	9,580	11,210

(a) All figures are rounded. Numbers reflect Area B estimates only except for visitors. Visitation estimates reflect Area A and Area B visitors.

(b) The proposed demolition and replacement construction figures presented in the November 2000 scoping alternatives included 900,000 sf of new and removed square footage associated with the LDAC project. The LDAC square footage has been analyzed under the earlier Letterman Complex EIS and is not included in the maximum demolition and maximum replacement construction totals.

(c) Total building square footage numbers represent buildout.

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Table 2: Financial Comparison Of Alternatives (all \$ figures in millions)(a)

	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Financially Self-sufficient in 2013	YES	YES	YES	YES	YES	YES	YES
Annual Program Expenditures	\$2.0	\$2.0-\$5.0	\$2.0	\$2.0-\$8.0	\$2.0-\$8.0	\$2.0-\$10	\$2.0
Total Capital Costs	\$519	\$589	\$614	\$494	\$525	\$562	\$479
Residential	\$33	\$148	\$193	\$38	\$80	\$88	\$57
Non-residential	\$172	\$201	\$177	\$177	\$199	\$212	\$250
Lodging/Conference	\$106	\$35	\$39	\$45	\$42	\$41	\$4
Miscellaneous	\$185	\$182	\$183	\$211	\$181	\$200	\$147
Non-revenue Generating Space	\$23	\$23	\$23	\$23	\$23	\$23	\$23
Year Capital Program Completed	approx. 2040	approx. 2025	approx. 2035	approx. 2030	approx. 2023	approx. 2030- 2035	2016
Implementation Phase Completed ^(b)	approx. 2050 to 2055	approx. 2029	approx. 2045	approx. 2040	approx. 2029	approx. 2040	2018

(a) For more complete financial information, refer to Appendix K (Financial Analysis) of this EIS.

(b) The implementation phase is terminated after the completion of all capital projects and the funding of all capital replacement reserves.



Figure 3: No Action Alternative (GMPA 2000)

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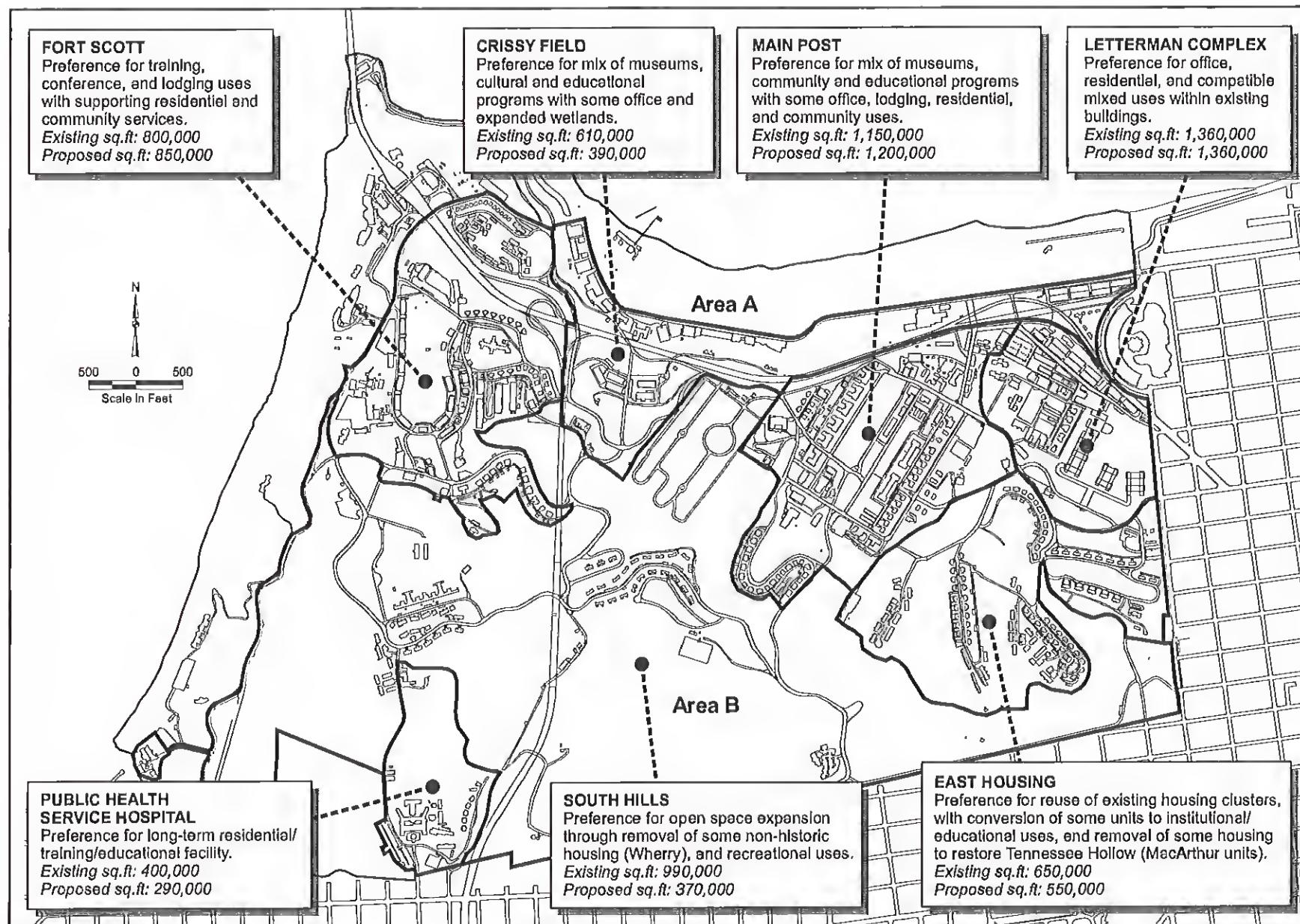


Figure 4: Building Use Preferences – No Action Alternative (GMPA 2000)

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The housing supply would be substantially reduced and would be used by park partner employees, program participants, and visitors. The historic forest, streambed and riparian corridors, native plant communities, and recreational opportunities would be protected, improved, and expanded in some instances. A variety of improvements would be implemented to make the Presidio easy to reach, explore, and enjoy. The Presidio would become a model of environmental protection and sustainable design. Tenants with an organizational mission focused on environmental and social sustainability or skills in education and science, innovative technologies, and problem solving would be selected to lease buildings and develop and operate programs at the site. Park partners would offer a wide range of programs to inform visitors about the Presidio's resources, discuss global concerns, celebrate cultural diversity, and educate the public on environmental issues.

The Trust and NPS would cooperate to provide a base level of interpretive services and education about the Presidio's history and significant resources. Land uses and description of building use preferences are shown in Figures 3 and 4.

2.4.2 LAND AND BUILDING USES

The No Action Alternative (GMPA 2000) proposes overall building square footage of 5,010,000 sf, or 950,000 sf less than currently exists within Area B. This would include approximately 3.7 million sf of mixed-use non-residential building space (community, office, cultural) and 1.3 million sf of residential space (houses, apartments, single room occupancy/dorm rooms). Building use preferences by planning district are shown in Figure 4.

The No Action Alternative (GMPA 2000) would reduce, but would not change the existing underlying land use pattern. There would be a net loss of built space primarily in the South Hills and Crissy Field Planning Districts. Crissy Field (Area B), where there would be a large decrease in built space, and the Main Post, where there would be a small increase, would include mixed uses with a focus on visitor-centered community and cultural activity through a mix of museums, cultural educational programs, and other uses. Uses in Fort Scott, where there would be a small increase in building space, would include training/educational, lodging, and conference uses. The Letterman Planning District would include mixed uses with an office/residential emphasis within existing buildings. Existing square footage

in East Housing and South Hills would decrease as a result of removal of a portion of the non-historic residential units. Preferred uses within the Public Health Service Hospital (PHSH) District include training/educational and conference with other supporting uses in slightly less square footage.

2.4.3 BUILT ENVIRONMENT

To increase open space, enhance natural resource values, and provide additional opportunities for outdoor recreation, a substantial amount of building demolition would occur. Approximately 1.12 million sf of existing structures would be removed, primarily consisting of Wherry housing units and non-historic structures along Crissy Field (Area B). The number of residential dwelling units under this alternative would decrease from about 1,650 to about 770 units, and the residential square footage would decrease as well.

New construction would be limited to about 170,000 sf and would be permitted only if existing buildings and improvements do not meet essential program and management needs. New construction would be designed and sited to be compatible with the historic setting. Most of the park's historic buildings would be rehabilitated for new uses.

2.4.4 OPEN SPACE AND NATURAL RESOURCES

Under the No Action Alternative (GMPA 2000), open space within Area B would increase from about 695 acres to about 794 acres, and the acreage of native plant habitat would be expanded from 70 to about 210 acres. Proposed actions, as detailed in the VMP, would result in a mosaic of native plant communities, historic forest, and landscape vegetation, which would increase the level of species and habitat diversity in the Presidio. This alternative would protect and enhance areas with natural resource values, as identified in the VMP and the GMPA. This alternative would require a committed, long-term management effort, as well as periodic monitoring and evaluation in order to rehabilitate and restore the native plant, historic forest, and landscaped areas of the park.

Some existing non-historic housing units in Tennessee Hollow would be removed to enable restoration of the stream corridor. The restored riparian corridor would connect to an expanded tidal marsh at Crissy Field. The Post

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Exchange and the Commissary would be removed to allow expansion of the Crissy Marsh. The Mountain Lake Enhancement Plan would be implemented. Landscape improvements at the LDAC site would enhance open space within this site.

Habitat supporting 13 rare or endangered species would be protected and enhanced. Invasive exotic plant species would be controlled and removed where feasible. Rare, threatened, and endangered plants would be monitored, protected, and enhanced. Non-historic forest would be removed, in accordance with the VMP, and replanted with native plants. Wetland features would be protected, enhanced, and restored where feasible. Water quality of surface and groundwater resources would be monitored. Geologic and soil features would be protected and erosion and unnatural disturbances would be minimized. Air quality, aroma, soundscape, and lightscape features would be protected.

2.4.5 CULTURAL RESOURCES

With the eleven exceptions noted in the GMPA, buildings that contribute to the significance of the NHLD would be rehabilitated in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Under the No Action Alternative (GMPA 2000), every reasonable effort would be made to incorporate compatible adaptive uses that require minimal alteration to the character-defining materials, features, spaces, and spatial relationships of historic buildings and their settings. Building changes necessary to accommodate new uses and facility upgrades would be compatible with the historic setting and have minimal impacts on resource integrity.

The cultural landscape would be preserved and rehabilitated in support of new uses and activities. Any new construction would be designed and sited to preserve the character and integrity of the NHLD. New construction would be compatible with the historic setting through elements of massing, scale, materials, style, and color. Design guidelines would be developed to direct all new construction and would set forth in further detail review processes for new construction. Historic linkages that were once physically or visually connected, such as the Main Post to Crissy Field, would be reestablished wherever possible through redesign of site systems and elements. Buildings that do not significantly contribute to or are incompatible with the historic

setting would be removed. Eleven historic structures identified for demolition in the GMPA would be removed. Other contributing features to the NHLD, such as landscapes, archaeological resources, and batteries, would be protected and preserved. Archaeological resources would be identified, protected, and monitored. The non-historic portion of the PSHS would be removed to allow restoration of the façade of the former hospital.

2.4.6 VISITOR EXPERIENCE

Under the No Action Alternative (GMPA 2000), the NPS, in cooperation with the Trust, would implement a base level of interpretive and educational opportunities within the park. The Trust and NPS would collaborate to develop and implement a Presidio interpretive strategy; interpretive media and programs would be provided in all major activity areas. The William Penn Mott Jr. NPS Visitor Center would provide enhanced visitor programs and services, such as audio tours, additional site bulletins and publications, and oral history programs.

Existing park-based programs would be continued, such as stewardship programs offered through the native plant nursery.

As envisioned in the GMPA, mission-related tenants would provide the majority of park programs through sponsorship of educational opportunities to increase environmental and cultural awareness. Tenants would develop and implement collaborative interpretive and stewardship programs derived from, and in some cases also enhancing, the Presidio's significant resources and values. Visitors could participate in tenant-sponsored activities such as seminars, lectures, festivals, exhibits, demonstrations, and hands-on participation. Trust-sponsored special events would be held periodically. Cultural centers developed by tenants would sponsor performances, demonstrations, exhibitions, and exchange programs.

Overnight lodging and accommodations for visitors would be offered in existing buildings, including some at the Main Post. Fort Scott would be converted to a conference and training center with adjacent lodging in existing buildings. The PSHS (with wings demolished) would provide overnight accommodations as a conference/residential/educational facility. A residential, environmental education center would be established in some of the non-historic housing in East Housing.

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Based on proposed land use intensities, this alternative could attract up to about 14,300 daily visitors and about 5.2 million visitors annually.

2.4.7 RECREATION

Under the No Action Alternative (GMPA 2000), existing recreational opportunities would be retained and utilized by a wide range of visitors. The Presidio's existing built recreational facilities would continue to be open to the public, including the swimming pool, bowling center, ball fields, golf course, tennis courts, and gymnasiums. As called for in the GMPA, the Pop Hicks ballfield would be retained and a new picnic area established. The ballfields at Fort Scott would be converted to an expanded parade ground, available for informal play and as an assembly area. The Morton Street ballfield would be removed for the restoration of Tennessee Hollow. Many landscaped areas and small open spaces would be maintained for passive recreation. Larger open spaces would be improved for visitor use and enjoyment. The Rob Hill group camping area would be redesigned and upgraded to improve camping and interpretive experiences. Visitors would be introduced to ways to enjoy the outdoors in a safe, low-impact manner to protect natural and cultural resources. Recreation programs would be offered by park rangers or park partners. Recreational activities would vary so that people could share their experiences with others, by receiving instruction or by assisting people less knowledgeable than themselves.

2.4.8 COMMUNITY/HOUSING

Under the No Action Alternative (GMPA 2000), the Presidio would support an active community of Presidio staff, tenants, and residents. Presidio housing would be reduced significantly (by up to 880 units) from its current stock through the removal of Wherry housing (between the years 2010 and 2012) and other non-historic units, and through the conversion of units to other uses such as lodging. In the long term, about 770 housing units would be available. Housing unit totals would be achieved through rehabilitation of existing units.

Basic community services would be provided for residents and employees; most of these services would be available to visitors and park neighbors. Services would be located near work places and residential clusters to reduce

the need for daily trips outside of the Presidio. Community meeting spaces would be available to Presidio tenants and residents.

Based on proposed land use intensities, the Presidio would accommodate about 1,660 residents and 770 households by 2020. Presidio based employees would number about 6,460.

2.4.9 TRANSPORTATION

Under the No Action Alternative (GMPA 2000), access and circulation improvements as called for in the 1994 GMPA would be made, including simplifying the road network by defining visitor routes, adding signs, reducing traffic in some areas, and closing some roads to automobiles. Internal intersections would be redesigned to improve safety. Large parking lots would be removed and smaller peripheral parking areas would be established. The total number of parking spaces would be reduced from 11,210 spaces to about 7,810 spaces. Special carpool and disabled visitor parking spaces and time limitations would be used to manage both visitor and tenant parking. A Presidio Transportation Demand Management (TDM) program to reduce automobile use within the Presidio would be implemented.

2.4.10 INFRASTRUCTURE AND UTILITIES

Infrastructure upgrades and improvements to accommodate new uses would be implemented under the No Action Alternative (GMPA 2000). Energy conservation measures would be pursued through the course of building and site rehabilitation. Public and private organizations would join in demonstrating technologies and practices that reduce environmental impacts or produce environmental benefits in energy conservation, solid waste management, transportation, water conservation, and sewage treatment. A water recycling system would be planned and implemented, subject to separate environmental review.

2.4.11 FINANCE¹

Financial modeling assumptions specific to the No Action Alternative (GMPA 2000) include: (a) Wherry housing would be retained for revenue generation until the end of the GMPA planning period (approximately 2010) and demolished in its entirety by 2012; (b) park program expenditures would be \$2 million annually; and (c) approximately 24 percent of all non-residential space would be used by program-enhancing, mission-related tenants who would provide Presidio programs and pay rent at the average estimated rental rate of \$9 per square foot (sf) per year.

Based upon the financial analysis used to compare the alternatives, revenues would cover expenses by 2013 without further need of Congressional appropriations. The total estimated capital costs would be \$519 million. The initial capital investment in building rehabilitation and park improvements is estimated to be completed by approximately 2040. The implementation phase is estimated to be completed between approximately 2050 and 2055.

The No Action Alternative (GMPA 2000) would be fairly sensitive to decreases in market rents and increases in capital costs. If non-residential rental revenues decline by 10 percent and residential revenues decline by 5 percent, and if all other modeling assumptions remain constant, this alternative would not be self-sufficient in 2013. This poor performance could be improved by delaying demolition of Wherry Housing (departing further from the 1994 GMPA) or by utilizing more third party financing than originally assumed.

¹ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

2.5 FINAL PLAN ALTERNATIVE

2.5.1 CONCEPT

The Final Plan Alternative was developed in response to public comments during the planning and scoping process and revised based on comments received on the Draft EIS and Draft Plan. (Refer the "Introduction" Section of this document and Volume II (Responses to Comments)² of this Final EIS for more detailed discussion of the development of the Final Plan Alternative.) The alternative is patterned on the No Action Alternative (GMPA 2000), with modifications to ensure its financial viability and to combine a number of concepts proposed in the November 2000 scoping alternatives into a single alternative – preservation of historic resources, expansion of open space, reduction in building space, and cultural and educational programs for park visitors.

Under the Final Plan Alternative, the Trust would preserve and enhance the Presidio's park resources and collaborate with partners, including the NPS, tenants, and residents, to provide a setting where visitors are welcome. The integrity and historic character of the NHLD would be protected, though over time limited changes in keeping with the park's character would occur. Historic buildings and landscapes that distinguish the NHLD would be rehabilitated and adaptively used. Open space would be increased, over time, primarily by removing non-historic housing in the southern portion of the park, and natural and recreational resources enhanced. Building space would be reduced from its current total, primarily by reducing the number of non-historic buildings. Some new construction could occur, to facilitate the rehabilitation and reuse of historic buildings, and in some cases to potentially provide replacement housing for units demolished. The natural environment would be enhanced, remnant systems preserved and expanded, the historic forest preserved and rehabilitated, and streambed corridors enhanced or restored. Recreational resources and visitor experience opportunities will be enhanced. Nearly one third of the building space will be set aside for public uses – visitor centers, lodging, cultural and educational uses, etc.

² Please see cover page for information on how to obtain a copy of Volume II.

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The Final Plan Alternative would monitor housing demand and the supply of housing would not exceed the current count of about 1650 units. There would be a continued preference for providing housing to Presidio-based employees. An improved mix of housing types would be achieved through subdivision and conversion of existing buildings, and potentially new construction.

Diverse and dynamic programs that help to preserve and protect park resources would bring people and the park together. Visitor programs would be offered through the cooperative efforts of the Trust, NPS, tenants, philanthropic organizations, cultural institutions, and community volunteers. The Trust and NPS would cooperate to provide a base level of interpretive services and education about the Presidio's history and its significant resources. The Trust would seek philanthropic support to supplement baseline program funds. Community support and participation would be integral to the effective management and stewardship of the park's resources.

Tenants would be selected based on their 1) ability to enhance the financial viability of the Presidio and to facilitate reuse of historic buildings; 2) contribution to the implementation of the general objectives of the GMPA and to the visitor experience; and 3) compatibility with the PTMP planning principles and preferred uses. Land uses and description of land use preferences are shown in Figures 5 and 6.

2.5.2 LAND AND BUILDING USES

The Final Plan Alternative proposes overall building square footage of 5.6 million sf, or 360,000 less than currently exists in Area B, and 590,000 square feet more than would exist under the No Action Alternative (GMPA 2000). Building space would include approximately 3.0 million sf of mixed-use non-residential building space (community, office, cultural) and 2.0 million sf of residential space (houses, apartments, single room occupancy dorm rooms). Building use preferences are shown in Figure 6.

Like the No Action Alternative (GMPA 2000), this alternative would reduce the intensity of, but not change the existing underlying land use patterns. Generally, there would be a net loss of built space in the southern planning districts (South Hills and East Housing), with the possibility over time of some modest replacement construction in the northern districts. In comparison to the No Action Alternative (GMPA 2000) there would be less

demolition within Crissy Field (Area B), with some new construction, to accommodate cultural, educational or other visitor oriented uses. There would be a shift in use preference for the PSHS complex from conference institutional/educational uses to primarily residential with educational uses. The Main Post, Letterman and Fort Scott Planning Districts would have a net increase of building space to accommodate proposed new uses and potential replacement housing.

Crissy Field (Area B) and the Main Post Planning Districts would include mixed-uses with a focus on visitor programs, community and related activities, and services including a mix of cultural and educational programs, lodging, office and other uses. The Letterman Planning District would have an office/residential use emphasis within an increased level of built space and some support services. Existing square footage in East Housing and South Hills Planning Districts would decrease as a result of removal of some non-historic housing units. East Housing would remain primarily a residential district. Preferred uses within the Fort Scott District would include mixed-use educational/institutional/ residential with other supporting uses. There would be no net change in square footage within the PSHS Planning District.

2.5.3 BUILT ENVIRONMENT

Built square footage under the Final Plan Alternative would fall between the No Action Alternative (GMPA 2000) and today's existing level of built space. The square footage would be reduced from today's 5.96 to 5.6 million sf over time. To increase open space, enhance natural resource values, and provide additional opportunities for outdoor recreation, a significant amount of building demolition would occur over time. Up to approximately 1.07 million sf of existing structures would be removed, primarily consisting of the Wherry housing, and some Washington Blvd. housing units.

A moderate amount of new construction could also occur over time, with a maximum amount of up to 710,000 sf. New construction would primarily be used to facilitate the effective rehabilitation and reuse of historic buildings; it could also be utilized to meet other plan goals such as to provide replacement housing. All new construction would occur within the constraints imposed by the Final Plan, and would only occur in areas previously developed. As with all alternatives, the NHLD status would guide what building changes would

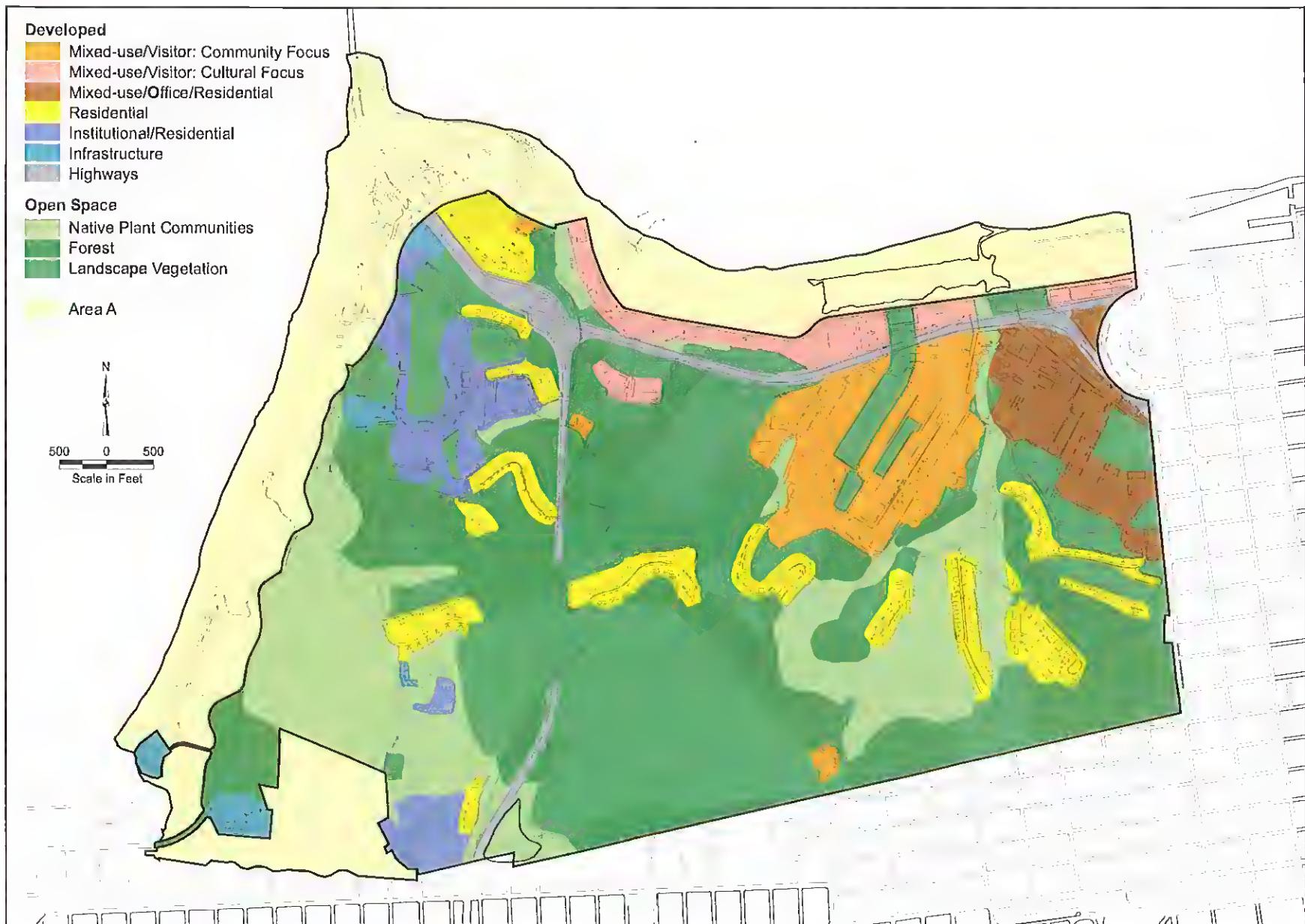


Figure 5: Final Plan Alternative

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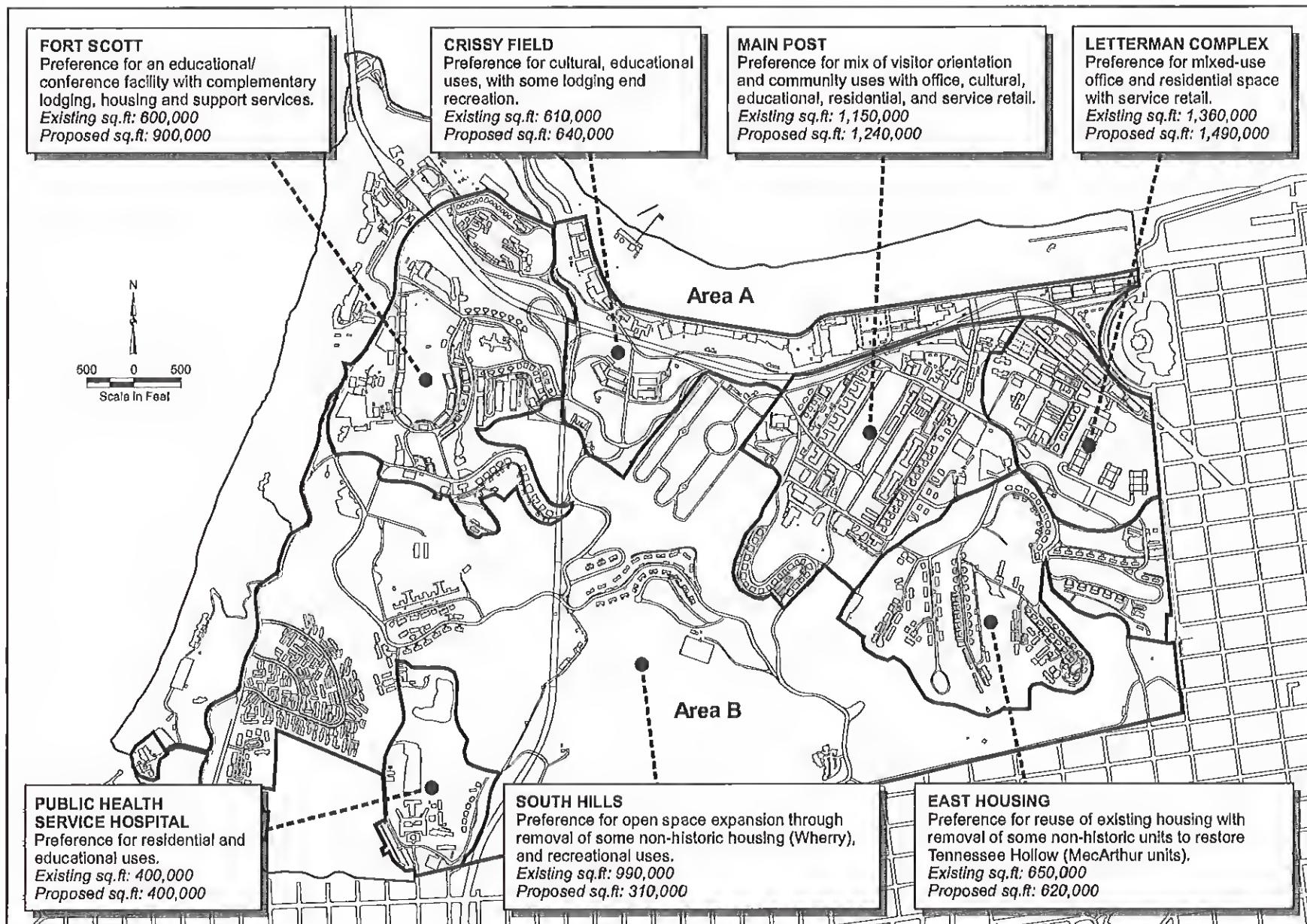


Figure 6: Building Use Preferences – Final Plan Alternative

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be made. Most of the park's historic buildings would be rehabilitated for new uses in accordance with the *Secretary of Interior's Standards for Rehabilitation*. New construction beyond that considered in the GMPA could include removal and replacement of non-historic housing at north Fort Scott and west of the Thoreau Center in the Letterman Planning District.

2.5.4 OPEN SPACE AND NATURAL RESOURCES

Under the Final Plan Alternative, open space within Area B would increase from about 696 acres currently to about 794 acres in 2020, about the same as the No Action Alternative (GMPA 2000). The acreage of native plant habitat would be expanded from 70 acres currently, to about 212 acres. Management actions would be similar to those described in the No Action Alternative (GMPA 2000).

The most significant change in open space is proposed for the southern part of the park (South Hills planning district) with the demolition of Wherry housing units. Some units in the East and West Washington housing areas would also be removed. Removal of some non-historic units in the East Housing District would allow for the restoration of Tennessee Hollow, as in the No Action Alternative (GMPA 2000).

The feasibility and scope of Crissy Field tidal marsh expansion into Area B in part or in whole, as discussed in the No Action Alternative (GMPA 2000), would be considered amongst several options for ensuring the marsh's long-term ecological health. A moratorium on new construction and long-term leasing east of the Commissary parking lot and west of the historic warehouses would be in place for the next two years, the estimated duration of the technical study underway.

2.5.5 CULTURAL RESOURCES

The historic character and integrity of the NHLD will be protected under the Final Plan Alternative. Modifications would be made over time, but in a manner that protects the character and integrity of the NHLD. Application of the *Secretary of Interior's Standards for the Treatment of Historic Landscapes* would ensure that changes that are necessary for new uses and upgraded facilities are compatible with the historic setting and protect its integrity. The

PTMP Planning Principles, as well as the district-level planning guidelines within the Final Plan, together with site-specific assessments, design guidelines, and other future planning efforts would identify how the NHLD's character defining features would be preserved and protected.

Buildings that contribute to the significance of the NHLD would be preserved, rehabilitated and used in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the maximum extent feasible. *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* would direct historic rehabilitation work and compatible uses for historic buildings would be encouraged. Changes that are necessary to accommodate new uses and facility upgrades would respect the integrity of the resources and the district.

Consistent with the Trust Act, buildings would be evaluated for possible reuse and in some instances demolition and/or replacement construction may be considered. Building demolitions and new construction would be subject to further analysis and public input. Consideration in future planning of building demolition and new construction would be in accordance with the terms set forth in the Programmatic Agreement (See Appendix D). The design of replacement construction would ensure that the association, feeling and setting of the significant elements and the integrity of the NHLD are protected. New construction would be limited to existing areas of development that have been previously disturbed or built up.

The Trust's program of cyclical maintenance to prevent damage to historic fabric and ensure historic buildings are well-maintained would be in place. Implementation of the actions set forth in the signed Programmatic Agreement regarding Trust operations, maintenance, and future planning activities would ensure compliance with the NHPA.

Archaeological resources would be preserved and protected for research and interpretation, and collections and significant objects in the landscape exhibited.

2.5.6 VISITOR EXPERIENCE

Under the Final Plan Alternative, the base level of education and interpretive programming under the No Action Alternative (GMPA 2000) would be

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expanded. The Presidio Trust, in collaboration with partners including the NPS, would enhance the visitor experience through stewardship programs, special events, exhibitions and programs regarding the Presidio's resources. NPS, in cooperation with the Trust, would provide site interpretation and resource education throughout the Presidio. The Trust and NPS would collaborate to develop and implement a Presidio interpretive strategy. The Trust would assist NPS in expanding these interpretive programs in the future.

The Presidio would become a setting for community and public events, educational and learning centers, exhibitions, youth-oriented and directed activities, hands-on demonstrations and learning experiences, resource stewardship activities, festivals and celebrations. Events could include Presidio Pasados, an annual event commemorating the establishment of San Francisco, Memorial Day and Veteran's Day celebrations, community-sponsored traditions, military programs, small informal outdoor concerts and performances, folklife festivals serving a national audience. Under the Final Plan, the Trust, in collaboration with NPS and the Golden Gate National Parks Association, would continue the commitment to providing and building volunteer-based stewardship programs. Stewardship programs would be continued and expanded to instill greater understanding and protection of park resources among residents, tenants, community members, and visitors. The Presidio's resources would become a laboratory for studying issues of conservation and preservation. Natural resource based restoration efforts would be used to provide expanded educational programs. Resource stewardship programs would be used to provide expanded volunteer opportunities and to promote greater awareness of preserving the Presidio's history.

Approximately one third of the building space would be available for public uses, including educational and cultural tenants, conferencing, small-scale lodging, recreational uses, and visitor amenities. A preference for cultural uses would be at Crissy Field and the Main Post; educational uses would be a priority at Fort Scott and the PHS. A range of lodging opportunities would be provided at Crissy Field and the Main Post, and possibly Fort Scott, with approximately 180 to 250 rooms total. Dorm-style accommodations, youth or elder hostels, B&B style inns, and small hotels would be considered. The Commissary would be a preferred location for a museum at Crissy Field, along with nearby building 640. To support Presidio visitors and the

Presidio's tenant community, some food and retail services would be provided, as well as restrooms appropriately located throughout the park.

Based on this proposed land use intensities, this alternative would attract up to about 19,600 daily visitors and about 7.2 million visitors annually.

2.5.7 RECREATION

Under the Final Plan Alternative, a range of recreation experiences would be continued and created, from the most peaceful and private to the most interactive. Open space and recreational amenities would be managed to provide settings for both intimate and large-group gatherings. The Presidio Trust would consider activities that are uniquely suited and appropriate to the natural and cultural resources found at the Presidio and that can be sustained without damaging these resources. The Trust would assure that educational, interpretive and recreation programs are as fully accessible as possible.

Retaining and enhancing the existing active recreational facilities would continue as a commitment, except where removal would be needed to accomplish other planning objectives, such as the reconstruction of Doyle Drive or the restoration of Tennessee Hollow. Future planning would consider alternatives for change to existing recreational facilities, both indoors and outdoors, and further define compatible recreation activities and uses. These could include rehabilitation, removal and relocation of amenities such as ballfields, campgrounds and picnic areas.

Trails would be improved and expanded as identified in the Presidio Trails and Bikeways Master Plan. A Trails Stewardship program would be initiated to promote public support and interest in trail construction, maintenance and management. Many landscaped open space areas would be maintained for passive recreational opportunities. Passive recreational experiences would be increased and diversified through the creation of new open space areas and through the continued restoration of both remnant natural areas and decadent forest stands.

Consistent with the *Presidio Vegetation Management Plan*, efforts would continue to maintain and enhance spectacular views, to restore historic visual connections, and to provide screening from elements that disrupt historic associations. Opportunities for scenic viewing and the qualities of scenic

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vistas from the Presidio would be increased through future site improvements, natural system restoration, and new trail connections and viewpoints.

2.5.8 COMMUNITY/HOUSING

The goal of the Final Plan Alternative, with respect to housing, is to meet the demand from Presidio-based employees using up to the same number of units which currently exist (about 1,650 accommodations which includes both single rooms and family dwellings). This would represent a significant departure from the No Action Alternative (GMPA 2000), which would result in the loss of about 880 dwelling units. A broad spectrum of housing opportunities would be provided to accommodate employees at a range of income levels. To help meet the projected demand for employee housing, the current unit mix would be reconfigured to reduce the number of large units and increase the number of studio, one- and two-bedroom units.

As non-historic housing units are removed to achieve natural resource enhancement and other goals, replacement housing would be achieved through an emphasis on conversion and subdivision of non-historic space. Between 200-400 units, may be replaced within new construction if required to meet Plan objectives. Priority sites for new construction, subject to additional analysis and public input. Housing conversions and limited new housing construction would provide an opportunity to locate more housing within walking distance of jobs, transit, and community services. Some East and West Washington housing would be retained for rehabilitation and conversion. To provide for the recovery of the endangered San Francisco *Lessingia germanorum*, approximately 620,000 sf of non-historic Wherry housing would be removed in phases and the units replaced. Approximately one-third of the units (beginning with those above Pershing Drive) would be demolished by 2010, and another one-third (extending below Pershing Drive) would be removed by 2020. The balance would be removed beyond the period of this environmental study (by 2030).

Basic community services would be provided for Presidio residents and tenants; most of the services would be available to visitors and park neighbors as well. Services would be located near work places and residential clusters to reduce the need for daily trips outside of the Presidio.

Under this alternative, the residential population by 2020 would number approximately 3,770. The number of employees would reach an estimated 6,890 in 2020.

2.5.9 TRANSPORTATION

Access, parking and circulation improvements under the Final Plan Alternative would be similar to the No Action Alternative (GMPA 2000), however, an expanded transportation strategy and TDM program that discourages auto use and provides multi-modal options for all park users would also be implemented. The use of public transit to and within the park would be encouraged as a way to reach and enjoy the Presidio and reduce automobile traffic. Public or alternative transit systems within the park would provide access between the main Presidio activity areas. Alternative fuels and new technologies would be used to reduce automobile impacts in and around the park. Public transit, pedestrian, and bicycle travel within the park would improve recreational opportunities and enhance environmental quality. The Presidio would be served by public transit and a shuttle system to provide for the transportation needs of park visitors, employees and residents. Regional public transportation improvements proposed by other agencies (including Doyle Drive) would improve access and transit connections to the Presidio. Parking would be reduced from 11,210 spaces to 9,170 spaces and would be configured and managed to serve Presidio activity centers, reduce impacts on the park's natural, historic and recreational features, protect its open space qualities, and avoid parking problems in adjacent city neighborhoods and along Crissy Field. A park-wide TDM program would be provided by the Trust and be supplemented by park tenants. Parking management, including tools such as permit and fee parking, would be actively used to reduce parking demand and discourage automobile use.

2.5.10 INFRASTRUCTURE AND UTILITIES

Conservation measures would be implemented under the Final Plan Alternative as described in the No Action Alternative (GMPA 2000). Environmental protection and sustainable design would be promoted in all infrastructure upgrades and improvements. Energy conservation measures would be pursued through the course of building rehabilitation. Technologies and practices in energy conservation, solid waste management, transportation,

water conservation, and water recycling would reduce environmental impacts or produce environmental benefits.

2.5.11 FINANCE³

Financial modeling assumptions specific to the Final Plan Alternative are the same as those for the No Action Alternative (GMPA 2000) except for the modified land use program and: (a) Wherry housing would be removed in three phases over a 30-year period; (b) park program expenditures would increase incrementally from \$2 million in 2006 to a stabilized level in 2020 of \$5 million annually; and (c) approximately 25 percent of the non-residential space is scheduled for use by cultural/educational tenants and partners providing programs to park visitors.

Revenues associated with the Final Plan Alternative would cover expenses in 2013 without further need for Congressional appropriations, with estimated completion of building rehabilitation and park improvements (estimated at \$589 million) by 2025. The implementation phase at the Presidio is estimated to be completed by 2029.

The Final Plan would be negatively impacted by decreases in market rent or increases in capital costs, but not to the same extent as the No Action Alternative (GMPA 2000). If non-residential rental revenues decline by 10 percent and residential revenues decline by 5 percent, and if all other modeling assumptions remain constant, this alternative would remain self-sufficient and sustainable, although the time required to complete the implementation phase would be extended about 5 years.

³ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

2.6 FINAL PLAN VARIANT

2.6.1 CONCEPT

This variation on the Final Plan Alternative is being evaluated in response to requests made by several organizations upon their review of the Draft EIS. (Refer to Consultation and Coordination Section for more detailed discussion of the development of the Final Plan Variant.) The Variant is modeled closely after the land use proposals of the Final Plan Alternative, and therefore this description focuses on the primary differences between the Final Plan and the Variant.

The Final Plan Variant places a greater emphasis on open space, calling for greater building demolition and therefore less built space as well as no new construction. Similar to the Final Plan Alternative, the Variant would seek to rehabilitate and reuse historic buildings, adapt non-historic buildings to high priority uses, expand open space, and achieve financial self-sufficiency. There would be proportionately less cultural/educational building use and proportionately more office use in comparison to the Final Plan Alternative. Housing options in the Variant differ somewhat from the Final Plan; as in the Final Plan, housing units removed in other parts of the park would be replaced through subdivision and conversion of existing space, but the possibility of obtaining any replacement units through new construction is foreclosed in the Final Plan Variant. Unlike the Final Plan, tenants would not be selected unless they offered a mission-serving business purpose and park programming; in this respect, the Variant is similar to the No Action Alternative (GMPA 2000).

2.6.2 LAND AND BUILDING USES

The Final Plan Variant proposes an overall building square footage of 4.71 million sf, which is 890,000 sf less than the Final Plan Alternative, 1,250,000 sf less than exists today, and 300,000 sf less than under the No Action Alternative (GMPA 2000). The land use mix under the Variant would include approximately 3.2 million sf of mixed-use non-residential building space (community, office, cultural) and 1.5 million sf of residential space (houses, apartments, single room occupancy dorm rooms). Overall, the Final Plan Variant anticipates 1.9 million sf of office space, slightly more than the 1.82 million sf of office space under the Final Plan Alternative, and less

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cultural/educational space (660,000 sf compared to 920,000 sf in the Final Plan Alternative). Relative to overall square footage, both the Final Plan (260,000 sf) and the Final Plan Variant (190,000 sf) anticipate minimal sf for lodging and conference space.

The Final Plan Variant calls for preferred uses in most cases identical to the Final Plan. Under the Final Plan Alternative and the Variant, the preferred use of the PSHH is residential use with the possibility of educational uses as well. Like the Final Plan Alternative, the Variant proposes that Fort Scott house an institutional campus, allowing for a mix of uses within the campus setting, including research, educational, conference, lodging, office and residential uses. The Variant differs from the Final Plan in that the majority of built space at the Fort Scott campus would be dedicated to educational use, and none of the barracks could be used for housing. Under the Variant, the existing non-historic residential units at North Fort Scott would be retained and reused without possibility for demolition or replacement infill housing; in the Final Plan Alternative, demolition and replacement construction could be considered. Like the Final Plan, the emphasis at Crissy Field (Area B) in the Variant would be on cultural and educational programs, but there would be no lodging possibility. Similar to the Final Plan Alternative, the Main Post would provide the greatest mix of uses, with office and community space supported by cultural, educational, lodging, residential, and retail space. Also, as under the Final Plan Alternative, the majority of built space at Letterman would be devoted to office uses with some supporting residential space. Land uses and building use preferences are shown in Figure 6a and 6b.

2.6.3 BUILT ENVIRONMENT

The Final Plan Variant proposes an overall building square footage of 4.7 million sf, which is 890,000 sf less than the Final Plan Alternative, 1,250,000 sf less than exists today, and 300,000 sf less than under the No Action Alternative (GMPA 2000). This variation is achieved primarily by demolishing all square footage called for under the Final Plan Alternative (all of Wherry and MacArthur housing units as well as additional units at East and West Washington and Quarry Road) plus all square footage designated for demolition under the No Action Alternative (GMPA 2000) and foreclosing new replacement construction for any purpose. Up to approximately 1.25 million sf of existing structures [compared to 1.07 million sf for the Final Plan Alternative and 1.12 million sf for the No Action Alternative (GMPA 2000)]

would be removed. Unlike the Final Plan Alternative, none of the square footage removed could be replaced as new construction is foreclosed.

2.6.4 OPEN SPACE AND NATURAL RESOURCES

Under the Final Plan Variant, open space within Area B would expand to about 819 acres, an increase of 25 acres over the Final Plan Alternative, 124 acres over existing and 25 acres over the No Action Alternative (GMPA 2000). As with the Final Plan Alternative, the most significant change in open space would occur in the South Hills planning district due to the demolition of Wherry housing units. Removal of units in the East Housing District and in West Letterman would provide more open space within Tennessee Hollow. The riparian stream corridor would be restored and would connect to Crissy Marsh, which would be expanded to at least 30 acres to make it sustainable. Open space within Crissy Field (Area B) to face the restored Area A would be maximized through demolition of all non-historic buildings as identified in the GMPA and through the removal of historic warehouses at the east end of the district. [Whereas the No Action Alternative (GMPA 2000) would have replaced some demolished building sites at Crissy Field (Area B) with parking areas, the Variant would restore these sites to open space.]

2.6.5 CULTURAL RESOURCES

The Final Plan Variant would demolish a number of historic buildings that contribute to the NHLD status. In addition to the eleven buildings demolished under the No Action Alternative (GMPA 2000), the Final Plan Variant would also eliminate historic warehouses at the east end of Crissy Field (Area B). District-level planning guidelines and other future planning efforts would identify how the NHLD's character defining features would otherwise be preserved and protected.

2.6.6 VISITOR EXPERIENCE

Under the Final Plan Variant, program activities would be limited to those proposed in the 1994 GMPA. Mission-related tenants would be the primary program providers. Programs financed by the Trust would be limited to those identified in the GMPA, carried out principally by the NPS or under their direction, and would not exceed \$2 million per year. Any level of programs

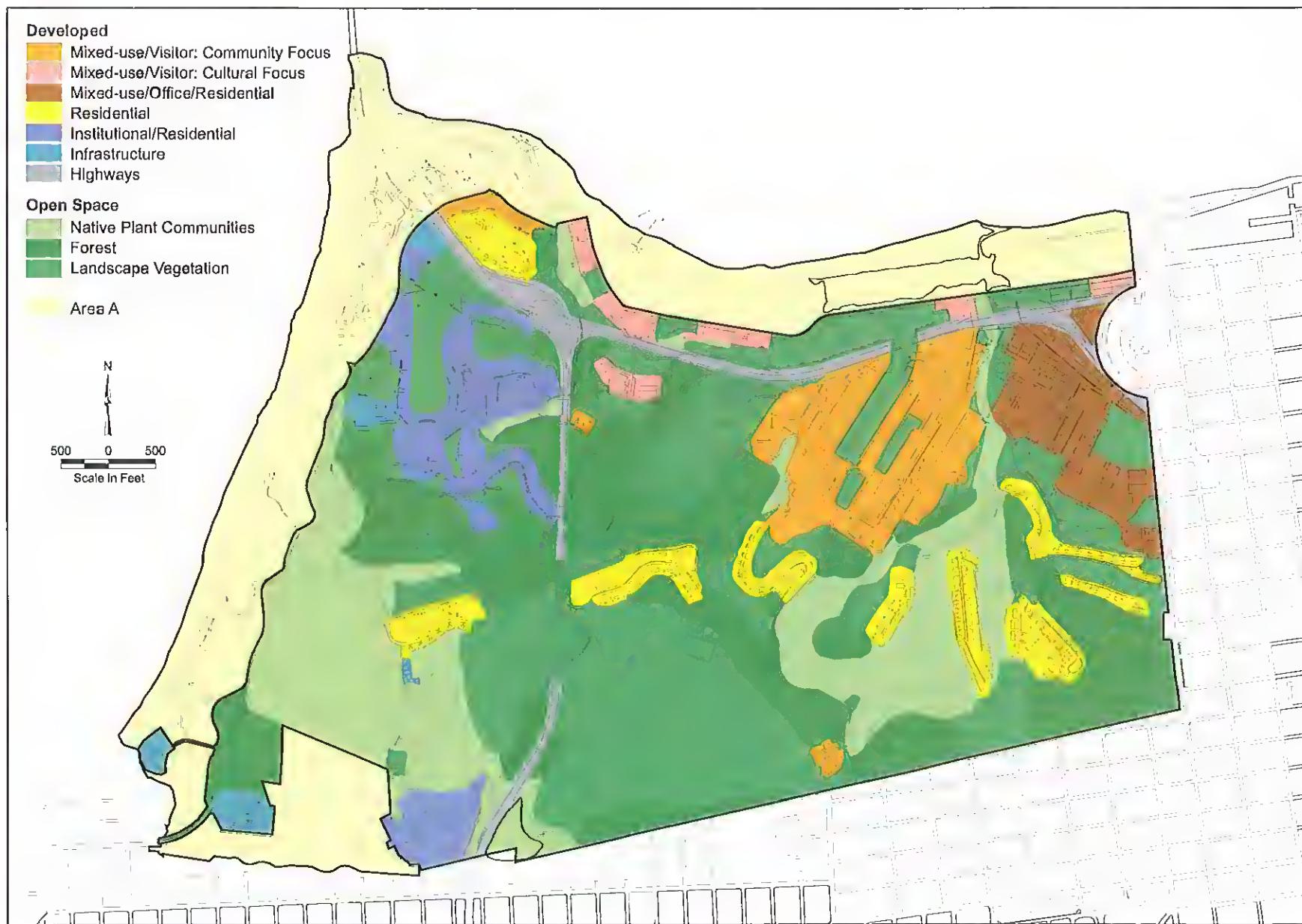


Figure 6a: Final Plan Variant

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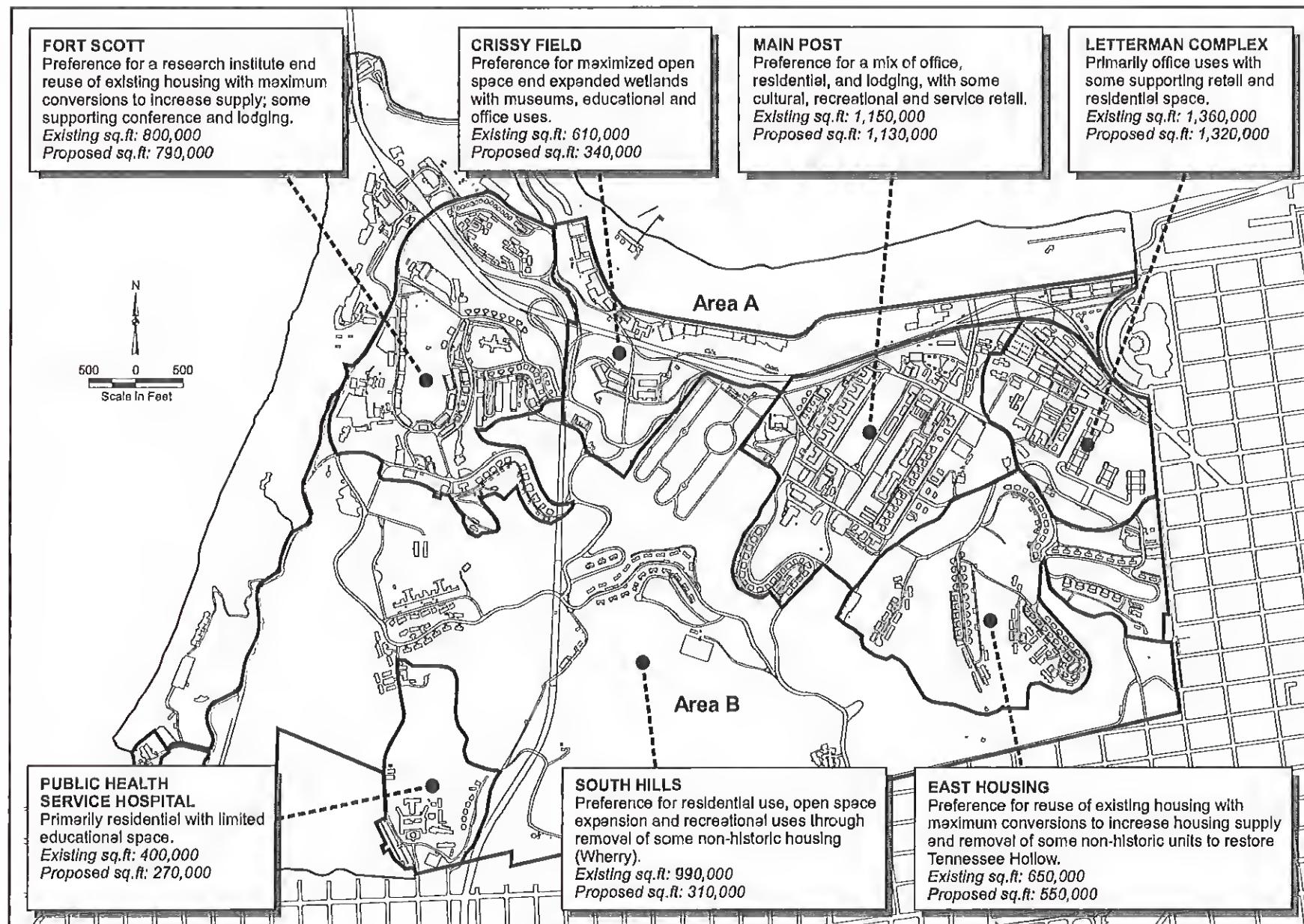


Figure 6b: Building Use Preferences – Final Plan Variant

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and related expenses beyond this would be provided only if funded by outside sources. Buildings would be leased to GMPA mission-related tenants only. No tenants would be accepted that would require a continuing operating subsidy. Based on proposed land use intensities, the Variant would attract up to about 16,100 daily visitors and about 5.9 million visitors annually.

2.6.7 RECREATION

Under this alternative, existing recreational opportunities would be retained and utilized by a wide range of visitors. The Presidio's existing built recreational facilities would continue to be open to the public, including the swimming pool, bowling center, ball fields, golf course, tennis courts, and gymnasiums. The ballfields at Fort Scott would be converted to an expanded parade ground, available for informal play and as an assembly area. The Morton Street and Pop Hicks ballfields would be removed for the restoration of Tennessee Hollow. Many landscaped areas and small open spaces would be maintained for passive recreation. Larger open spaces would be improved for visitor use and enjoyment. The Rob Hill group camping area would be redesigned and upgraded to improve camping and interpretive experiences. Visitors would be introduced to ways to enjoy the outdoors in a safe, low-impact manner to protect natural and cultural resources. Recreation programs would be offered by park rangers or park partners. Recreational activities would vary so that people could share their experiences with others, by receiving instruction or by assisting people less knowledgeable than themselves.

2.6.8 COMMUNITY/HOUSING

The Final Plan Variant would not include any new construction. Demand for housing by Presidio-based employees would be periodically assessed and would be met solely through subdivision of existing residential space and conversion of non-residential buildings, resulting in a maximum of about 1,110 units. Similar to the Final Plan Alternative, Wherry Housing would be removed in phases to support the recovery of the San Francisco lessingia, restore native dune scrub habitat, and increase open space. Housing at East and West Washington could be removed in the future if deemed appropriate by further study. The same units proposed for removal in these neighborhoods under the Final Plan would be removed under the Variant. Lodging would be provided at the Main Post and Fort Scott with no lodging at

Crissy Field. Under the Final Plan Variant, the residential population by 2020 would number approximately 2,630. Based upon standard employment densities, the number of employees would reach an estimated 6,630 in 2020.

2.6.9 TRANSPORTATION

The Final Plan Variant would reduce the number of parking spaces to an initial parking supply of 7,830 parking spaces, 1,340 fewer spaces than the Final Plan Alternative, and approximately the same number of spaces as the No Action Alternative (GMPA 2000). The Variant would attempt to reduce parking demand to equal the reduced parking supply and would implement an aggressive transportation demand management program, similar to the Final Plan Alternative, including market rate parking fees.

2.6.10 INFRASTRUCTURE

Conservation measures would be implemented as described under the No Action Alternative (GMPA 2000).

2.6.11 FINANCE⁴

Financial modeling assumptions of the Final Plan Variant are the same as those for the Final Plan Alternative, except Park program expenditures would be \$2 million annually, and 36 percent of all non-residential space is scheduled for use by mission-based tenants and partners providing programs to park visitors.

Revenues associated with this Variant would cover expenses in 2013 without further need for Congressional appropriations, with estimated completion of the capital program (estimated at \$614 million) for building rehabilitation and park improvements in approximately 2035. The capital program under the Final Plan Variant is estimated to be completed in approximately 2045.

⁴ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

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The Final Plan Variant would be negatively impacted by decreases in market rent or increases in capital costs, but not to the same extent as the No Action Alternative (GMPA 2000). If non-residential rental revenues decline by 10 percent and residential revenues decline by 5 percent, and if all other modeling assumptions remain constant, this alternative would remain self-sufficient and sustainable, although reduced revenues would result in slim operating margins after 2013 and the implementation phase would be extended about 15 years.

2.7 RESOURCE CONSOLIDATION ALTERNATIVE

2.7.1 CONCEPT

Under the Resource Consolidation alternative, the Presidio would become an enhanced open space haven in an urban setting by maximizing the increase in open space in the southern part of the park and concentrating development in the north. Overall, building square footage in Area B would be reduced from what currently exists due to loss of residential units and building space. A substantial number of buildings would be demolished, including the entirety of the historic PSHS complex, which would affect the integrity of the NHLD.

Open space and natural resource enhancements (endangered species recovery and Tennessee Hollow riparian restoration) would be maximized, and recreational opportunities expanded. Tenets of sustainability, biodiversity, smart growth, and preservation would be promoted by preserving and enhancing the Presidio's natural and cultural resources and concentrating building area, including in-fill mixed-use and housing construction in the northern part of the park. Buildings would be rehabilitated for new uses. The primary goal would be reuse of existing structures along with compatible new construction that would generate sufficient funds for open space improvements and park enhancements. Park programs would be delivered in a manner similar to the Final Plan Alternative, but at a somewhat reduced level. Programs would focus on the park's biodiversity, including native species and ecosystems, and the history of the Presidio. Land uses and description of land use preferences are shown in Figures 7 and 8.

2.7.2 LAND AND BUILDING USES

The Resource Consolidation Alternative proposes overall building square footage of 5.30 million sf, or 660,000 less than currently exists in Area B and 290,000 square feet more than the No Action Alternative (GMPA 2000). The Resource Consolidation Alternative would include approximately 4.0 million sf of mixed-use non-residential building space (community, office, cultural) and 1.3 million sf of residential space (houses, apartments, dorms/single room occupancy units). A description of building use preferences is shown in Figure 8.

The Resource Consolidation Alternative would maximize the removal of square footage in the southwest portions of Area B with the removal of Wherry housing, all of East and West Washington housing, all of PSHS, and some units within the East Housing Planning District, and redistribute about half into already built up areas in the northern portion of Area B. The emphasis within Crissy Field (Area B), Main Post and Letterman Planning Districts would be on mixed-use office districts with some cultural/educational, lodging, community, residential and other uses. To maximize natural resource values, proposals to decrease built square footage at Crissy Field (Area B) and to increase built space within the Main Post and Letterman Planning Districts would be considered up to the square footages proposed in Figure 8. Preferred uses within the Fort Scott Planning District would be for mixed-use institutional/residential. Proposals to increase square footage at Fort Scott would be considered up to proposed square footage levels.

2.7.3 BUILT ENVIRONMENT

To maximize open space and recreational use and allow for enhancement of native plant habitat and natural resource values, up to 1.91 million sf of both historic and non-historic building demolition would occur. The majority of building demolition would occur in the southwest part of Area B. The number of residential dwelling units under this alternative would likely decrease from 1,650 to about 910, and the residential square footage would be the lowest of any alternative.

Compatible new replacement construction of up to 1.25 million sf would provide new opportunities for residential and mixed uses. New construction

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would be designed and sited to be compatible with the historic setting. The majority of replacement construction would occur in the activity centers in the north to consolidate open space and move density closer to previously developed and disturbed areas and transportation services.

Implementation to the proposed square footage levels would be dependent upon a variety of factors including historic and cultural resource constraints and future NEPA and NHPA evaluations of plans or proposals.

2.7.4 OPEN SPACE AND NATURAL RESOURCES

Under the Resource Consolidation Alternative, open space within Area B would increase from about 695 acres currently to about 838 acres, 44 acres more than the No Action Alternative (GMPA 2000). The acreage of native plant habitat would be expanded from 70 acres currently to about 213 acres, 3 acres more than the No Action Alternative (GMPA 2000). Management actions would be similar to those described in the No Action Alternative (GMPA 2000), including removal of the Post Exchange (PX) and Commissary to allow for expanding the tidal marsh. Unlike the No Action Alternative (GMPA 2000), this alternative would remove structures on about 10 acres at the PSH complex, which would increase open space and landscape vegetation and native plant communities within the complex.

2.7.5 CULTURAL RESOURCES

Cultural landscape preservation under the Resource Consolidation Alternative would be similar to that described for the Final Plan Alternative. Additional environmental analysis and compliance with federal historic preservation laws during future planning would be pursued prior to removal of the historic buildings at the PSH complex, which would adversely affect the integrity of the NHLD.

2.7.6 VISITOR EXPERIENCE

Under the Resource Consolidation Alternative, park programs for visitors would be similar to those under the Final Plan Alternative, but would focus on instilling greater understanding and protecting resource values of the park. More emphasis would be placed on stewardship projects and programs related to sustainable practices and other issues of global importance that would also

demonstrate the Presidio's environmental leadership. The Trust would build upon NPS interpretive programs to cover natural and cultural resources preservation and to create new programs in the restored open space areas of the South Hills.

A key facility under this alternative would be a new Sustainability Center to demonstrate sustainable practices to residents, visitors, interested organizations, and agency partners. This Center would encompass the existing recycling and composting centers, a native plant nursery and a new cultural plant nursery, and a new exhibit space to tell the story of sustainability.

Visitor programs would also focus on learning about park practices and policies related to environmental stewardship and cultural preservation. The Presidio's resources would become a laboratory for studying issues of conservation and preservation. Natural resource restoration education and stewardship programs would be key elements to provide educational opportunities to students. Stewardship opportunities would be created to assist in the construction, maintenance, and management of trails. Cultural resource stewardship programs would be offered to provide volunteer opportunities and promote greater awareness of methods of preserving the history and pre-history of the Presidio.

Special events would be held periodically at suitable locales. Special events would emphasize the park's natural and cultural resources and smaller, appropriate events would be held in restored open space areas.

Guest facilities would be made available to accommodate overnight visitors.

Based on proposed land use intensities, this alternative could attract up to about 19,100 daily visitors and about 7.0 million visitors annually.



Figure 7: Resource Consolidation Alternative

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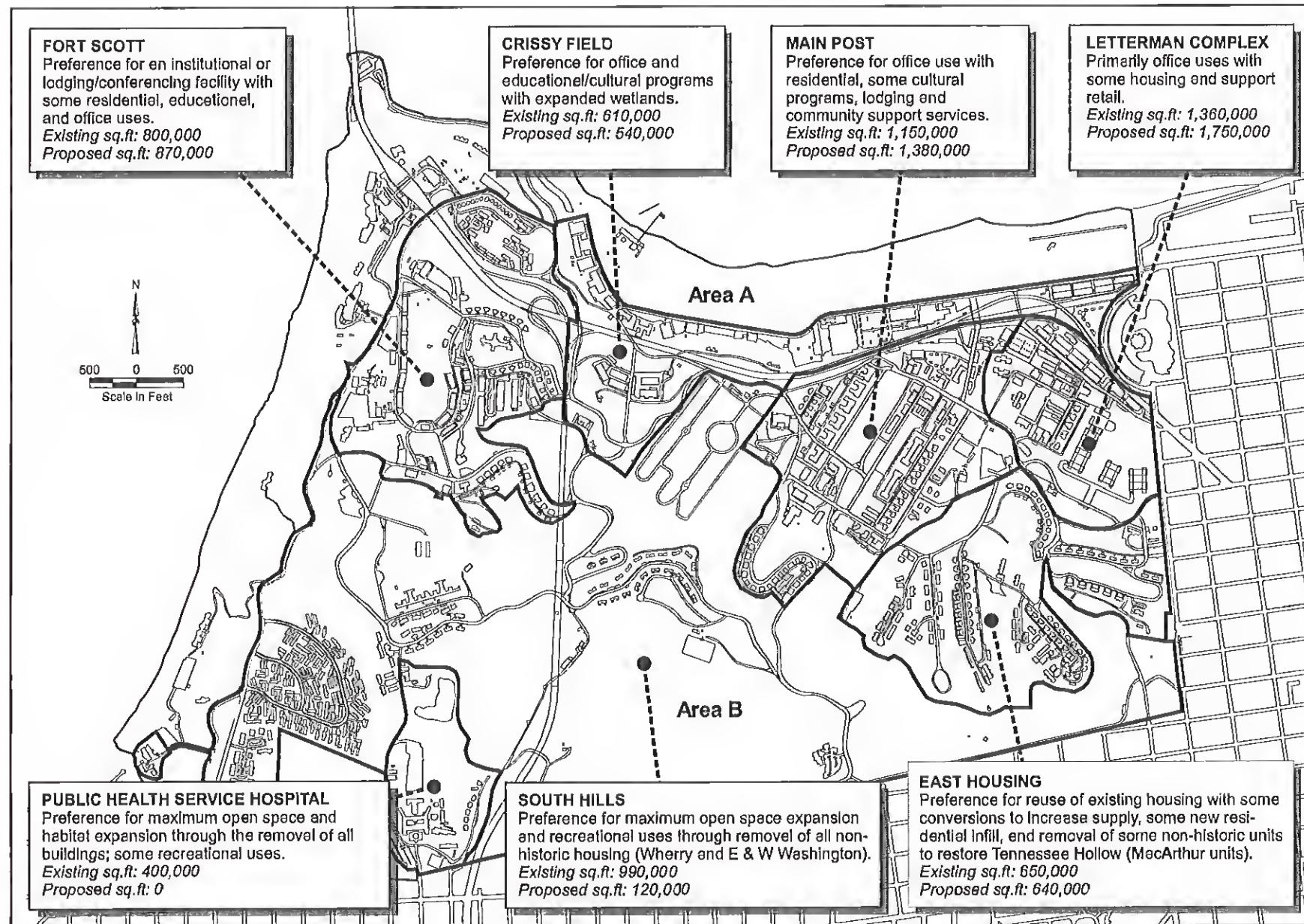


Figure 8: Building Use Preferences – Resource Consolidation Alternative

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2.7.7 RECREATION

Recreation opportunities, facilities, and management under the Resource Consolidation Alternative would be similar to the Final Plan. Passive recreational and educational experiences would be increased and diversified through the creation of new open space areas in the South Hills, though some areas might be made less accessible for recreation to promote the area's restoration. The natural areas stewardship program would be continued and would serve as a primary source for recreational and educational programming.

2.7.8 COMMUNITY/HOUSING

The Resource Consolidation Alternative would provide slightly more housing, (about 140 units more) than the No Action Alternative (GMPA 2000), but would decrease the number of existing units by about 740 units. In the long-term, about 910 housing units would be available. Following removal of existing housing to allow natural resource enhancements, replacement housing would be achieved through a mix of rehabilitation of historic units, some conversions of non-historic space, and replacement construction. New housing construction would provide an opportunity to locate more housing within walking distance of jobs, transit, and community services.

The removal of Wherry housing (one-third by 2010, two-thirds by 2020) and East and West Washington housing would concentrate much of the residences within the built-up areas in the north. Limited community and visitor support service would be provided for residents and employees. Services would be located near work places and residential clusters to reduce the need for daily trips outside the Presidio. The reduction of housing would result in a smaller Presidio community and therefore a reduced need for support services.

Under this alternative, the residential community at the Presidio is projected to number 2,230 by 2020. The employee population would reach an estimated 8,480 by 2020.

2.7.9 TRANSPORTATION

Under the Resource Consolidation Alternative, the circulation network would be simplified. Any roads that would be considered secondary due to the removal of buildings that they service (such as Washington Boulevard) would be removed or converted to trails and pathways. Because the amount of occupied building space would be reduced, the demand for parking and access to facilities would decrease. Existing parking areas would be reduced in size and number, and a total of 8,980 parking spaces would be provided. Large paved areas, such as on the Main Post parade ground and along the Public Health Service Hospital borders, would be removed. Remaining parking would be clustered around the main activity areas. Proposals for alternative transportation strategies and TDM would be the same as described in the Final Plan Alternative.

2.7.10 INFRASTRUCTURE AND UTILITIES

Conservation measures would be implemented as described for the No Action Alternative (GMPA 2000). Due to the consolidated building stock, infrastructure requirements would be somewhat reduced under this alternative.

2.7.11 FINANCE⁵

Financial modeling assumptions specific to this alternative include: (a) Wherry housing would be removed in phases over a 20-year period, one-third by 2013 and the remaining two-thirds by 2020; (b) park program expenditures would increase incrementally from \$2 million in 2006 to a stabilized level in 2020 of \$8 million annually; and (c) approximately 17 percent of the non-residential space would be scheduled for use by cultural/educational tenants and partners to providing programs to park visitors.

⁵ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

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Revenues associated with this alternative would cover expenses in 2013 without further need for Congressional appropriations, with estimated completion of initial capital improvements (estimated at \$494 million) for building rehabilitation and park improvements by approximately 2030. The implementation phase at the Presidio is estimated to be completed in approximately 2040.

Reduced revenue assumptions and increased capital costs would have a negative impact on the financial performance of this alternative, but not to the same extent as with the No Action Alternative (GMPA 2000). If non-residential revenues decline by 10 percent and residential revenues decline by 5 percent, and if all other modeling assumptions remain constant, this alternative would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed and the implementation phase would be extended by about 20 years.

2.8 SUSTAINABLE COMMUNITY ALTERNATIVE

2.8.1 CONCEPT

Under the Sustainable Community Alternative, the Presidio would become a sustainable live/work community in a park setting and a model of environmental sustainability. There would be an emphasis on creating a Presidio-based community of users offering innovative, state-of-the-art ideas and approaches on environmental sustainability and related subjects.

Open space and recreational opportunities would be expanded, and historic forest and native plant communities improved. Riparian corridors would be restored and the historic forest rehabilitated and preserved as part of the cultural landscape. The historic character and integrity of the NHLD would be protected. A moderately low level of non-historic building demolition would occur to enhance open space and improve native plant communities.

The footprint of the built environment would largely remain in its present dispersed pattern and an emphasis would be placed on building rehabilitation and reuse. While the existing number of housing units would decrease, the total number of units would be more than under the No Action Alternative (GMPA 2000). Residents would also work in the park, supporting a sustainable park community. Park programs would be delivered in a manner

similar to that proposed by the Final Plan Alternative, but at a somewhat reduced level. Land uses and description of land use preferences are shown in Figures 9 and 10.

2.8.2 LAND AND BUILDING USES

The Sustainable Community Alternative proposes overall building square footage of 5.69 million sf, or 270,000 sf less than currently exists in Area B, and 650,000 sf more than under the No Action Alternative (GMPA 2000). This would include approximately 3.8 million sf of mixed-use non-residential building space (community, office, cultural) and 1.9 million sf of residential space (houses, apartments, dorms/single room occupancy units). A description of building use preferences is shown in Figure 10.

This alternative would retain a fairly dispersed pattern of development within Area B, and focus on enhancing the residential opportunities within the mix of uses by removing a moderate amount of square footage in the southwest portions of Area B with the removal of Wherry housing, and redistributing it into already built up areas in the north and east portion of the park. With the retention of all of East and West Washington housing and the PSHS, the land use pattern of this alternative would be similar to the No Action Alternative (GMPA 2000) in the South Hills Planning District.

The Crissy Field (Area B) and Main Post Districts, where built space could increase up to levels proposed in Figure 10, would have a preference for mixed-use office with a mix of visitor-oriented cultural and community uses. The Letterman Planning District would have a mixed-use office/residential preference, and square footage would decrease modestly. The focus in the southern portion of Area B would be on residential use, with this being the preferred use within the PSHS District, South Hills (with the retention of all of the East and West Washington housing units), and East Housing. Proposals to increase built space in the East Housing District would be considered, while there would be a modest increase in the PSHS District and a decrease in South Hills. Fort Scott would become an institutional campus with a modest decrease in built space.

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2.8.3 BUILT ENVIRONMENT

To help create a stable live/work community within the park, the Sustainable Community Alternative assumes a moderate level of building demolition at 890,000 sf, mostly in the southwest part of Area B. The number of residential dwelling units under this alternative would decrease from about 1,650 to about 1,430, with a mix of conversions and a moderate level of new replacement construction. Residential square footage would also decrease modestly.

Compatible new replacement construction of up to 620,000 sf would provide new opportunities for residential and mixed uses. New construction would be designed and sited to be compatible with the historic setting. The majority of replacement construction would occur in the activity centers in the north to consolidate open space and move density closer to previously developed and disturbed areas, and transportation services.

Implementation to the proposed square footage levels in Figure 10 would be dependent upon a number of factors including historic and cultural resource constraints and future NEPA and NHPA evaluations of plans or proposals.

2.8.4 OPEN SPACE AND NATURAL RESOURCES

Under the Sustainable Community Alternative, open space within Area B would increase from about 695 acres currently to about 772 acres, 22 acres less than the No Action Alternative (GMPA 2000). The acreage of native plant habitat would be expanded from 70 acres currently to about 209 acres, 1 acre less than the No Action Alternative (GMPA 2000). Management actions would be similar to those described in the No Action Alternative (GMPA 2000) with one exception: the feasibility and scope of Crissy Field tidal marsh expansion into Area B in part or in whole would be evaluated through future site planning studies and environmental analysis. Identification of the appropriate expansion area would be based on such factors as cost, source of funding, land use options, building reuse feasibility and cultural resource constraints, including the location of historic buildings, potential archaeological sensitivity, hazardous substance cleanup, utility corridors and the future Doyle Drive configuration.

2.8.5 CULTURAL RESOURCES

Cultural resource preservation actions would under the Sustainable Community Alternative be similar to those described in the Final Plan. Future planning would identify how the park's character-defining features would be preserved and protected. Building demolition and new construction would be subject to additional environmental review and historic compliance.

2.8.6 VISITOR EXPERIENCE

Under the Sustainable Community Alternative the interpretive services provided by the NPS, in cooperation with the Trust, would be expanded to provide Presidio tenants and residents and local, national and international park visitors with lively, mixed-use activity areas. Programs and facilities would focus on community-based users, while still being open to traditional park visitors.

The Presidio Trust, working with community partners, would create new events to promote a greater sense of community within the Presidio. As a possibility, the "At the Presidio" pilot program would continue to bring traveling exhibits and events to the Presidio and would place greater emphasis on providing free or reduced-cost "community nights" for residents and tenants to enjoy the productions. Tenants would develop and implement collaborative interpretive and stewardship programs derived from, and in some cases enhancing, the Presidio's significant resources and values. Visitors could participate in activities offered by the Trust such as seminars, lectures, festivals, exhibits, demonstrations, and hands-on participation. Trust-sponsored special events would be held periodically at suitable locales.

A new Sustainability Center would demonstrate sustainable practices to residents, tenants, and community members on topics from recycling, composting, and energy efficiency, for example. Residents and employees of tenant organizations would be encouraged to participate in the stewardship of park resources.

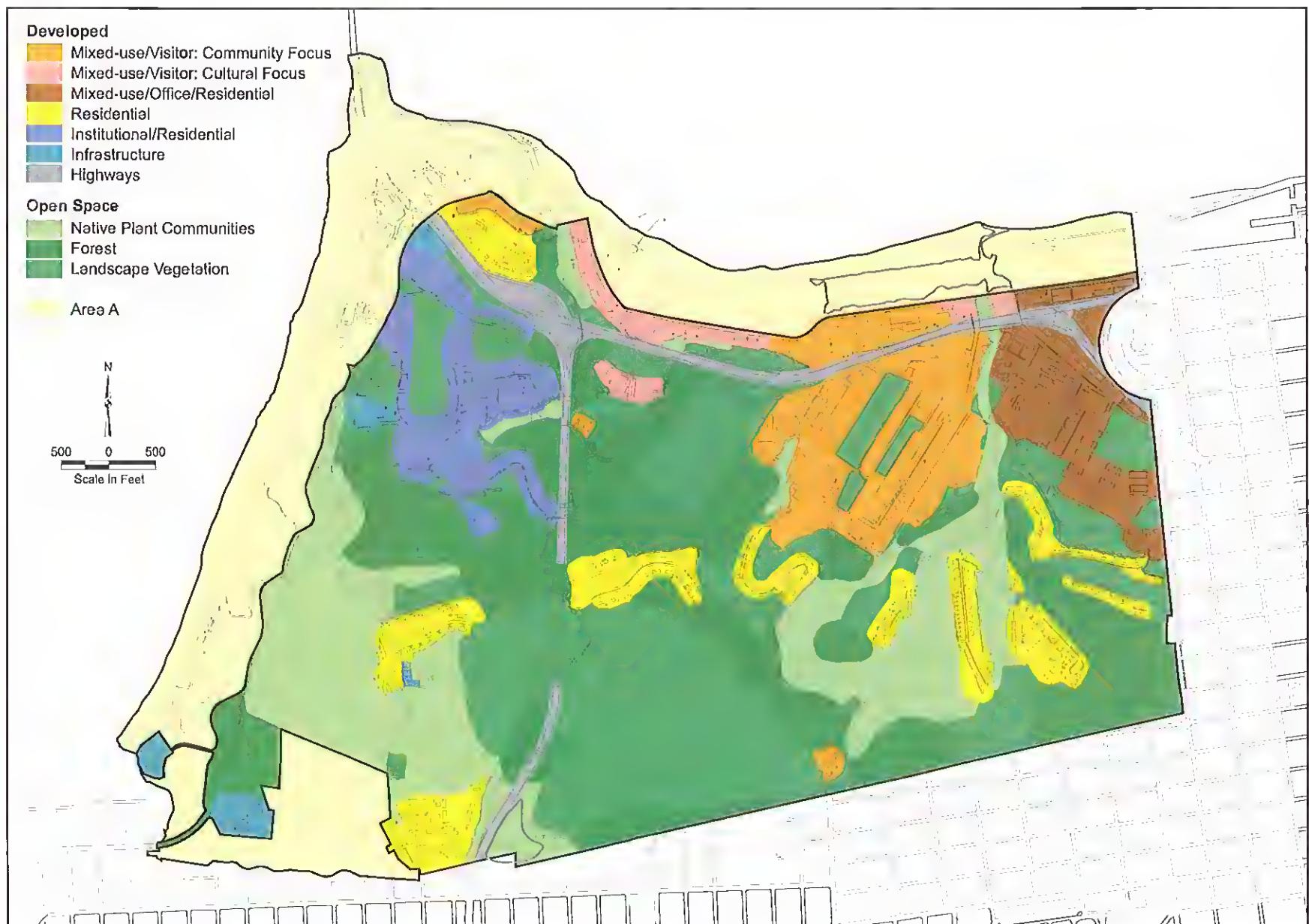


Figure 9: Sustainable Community Alternative

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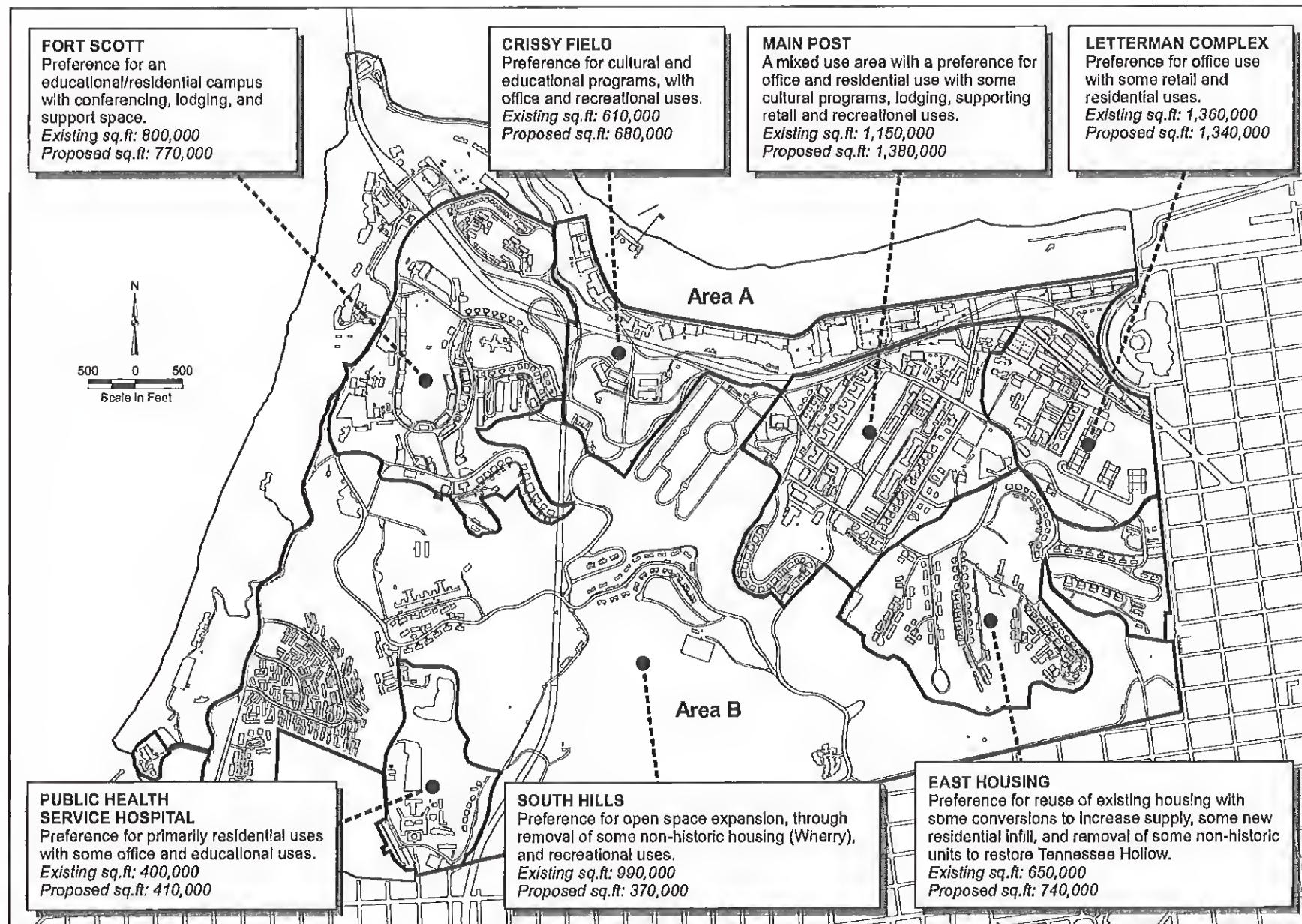


Figure 10: Building Use Preferences – Sustainable Community Alternative

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Small public gathering spaces, community centers, neighborhood community gardens, additional recreational facilities, food and retail spaces would likely all be part of the mix of a sustainable community. Fort Scott could be used as an institutional campus. Some lodging for park visitors and community needs would be provided.

Based on proposed land use intensities, this alternative could attract up to about 22,400 visitors daily and about 8.2 million visitors annually.

2.8.7 RECREATION

Under the Sustainable Community Alternative, high quality, appropriate recreation opportunities would be provided for a wide range of visitors. All existing recreational facilities would be retained, except those that would be relocated due to other planning objectives. Active recreation facilities would be made available and promoted to residents and community members, helping to serve the recreational needs of the surrounding urban area as well as Presidio residents. Existing picnic areas, smaller fields, and the Rob Hill group camping area would likely be improved. Many landscaped areas as well as small open spaces would be maintained for passive or informal recreation uses. Open spaces would be made available for community and public events.

Trails would be improved and expanded as identified in the Presidio Trails and Bikeways Master Plan. A Trails Stewardship program would be initiated to garner public support and interest in trail construction, maintenance and management.

A range of recreation experiences would be created, from the most peaceful and private to the most interactive. Passive recreational and educational experiences would be increased and diversified through the creation of new open space areas.

2.8.8 COMMUNITY/HOUSING

Under the Sustainable Community Alternative, a sustainable park community would be developed. There would be significantly more housing, about 660 units more than the No Action Alternative (GMPA 2000), but a decrease in the number of existing units by about 220 units. In the long-term, a total of

about 1,430 housing units would be available. Housing unit totals would be achieved through a mix of rehabilitation of historic units, conversions of non-historic space, and replacement construction. New housing construction would provide an opportunity to locate more housing within walking distance of jobs, transit, and community services.

To provide for the recovery of the endangered San Francisco *Lessingia germanorum*, removal of Wherry housing would be phased, with one-third of the units demolished by 2010 and the remainder by 2020.

Small-scale retail uses intended for park residents who work in the park and neighborhood would promote a stable live/work community. Basic community services would be provided for residents and employees. Some housing would be provided for long-term residential staff and program participants. To support a sense of community, the park setting would be enhanced by the creation of inviting community and public activity centers and gathering spaces.

Under this alternative, the residential population at the Presidio would reach 3,330 by 2020. Presidio employees would number about 7,520 in 2020.

2.8.9 TRANSPORTATION

Access and circulation improvements would be similar to those of the Final Plan Alternative, with one exception. In this alternative, an alternate access route to the PSHS would be provided from the northwest. Specifically a road would link Pershing Drive to Battery Caufield Road, providing an alternative to 14th and 15th access routes. Existing parking areas would be reduced in size and number, and a total of 9,790 spaces would be provided. A transportation demand management program would be implemented, similar to the Final Plan Alternative.

2.8.10 INFRASTRUCTURE AND UTILITIES

Conservation measures would be implemented as described in the No Action Alternative (GMPA 2000).

2.8.11 FINANCE⁶

Financial modeling assumptions specific to the Sustainable Community Alternative include: (a) Wherry housing would be removed in phases over a 20-year period, one-third by 2013 and the remaining two-thirds by 2020; (b) park program expenditures would increase incrementally from \$2 million in 2006 to a stabilized level in 2020 of \$8 million annually; and (c) approximately 22 percent of the non-residential space would be scheduled for use by cultural/educational tenants and partners to providing programs to park visitors.

Revenues associated with this alternative are projected to cover expenses in 2013 without further need for Congressional appropriations, with estimated completion of initial capital improvements (estimated at \$525 million) for building rehabilitation and park improvements by approximately 2023. The implementation phase at the Presidio is estimated to be completed by 2029.

Reduced revenue assumptions and increased capital costs would have a negative impact on the financial performance of the alternative, but not to the same extent as the No Action Alternative (GMPA 2000). If non-residential revenues decline by 10%, and residential revenues decline by 5%, and all other modeling assumptions remain constant, this alternative would remain self sufficient and sustainable, although the implementation phase would be extended about 5 years.

2.9 CULTURAL DESTINATION ALTERNATIVE

2.9.1 CONCEPT

In the Cultural Destination Alternative, the Presidio would be a national and international cultural destination park, a portal for visitors to the American West and Pacific, and a place of international distinction for its programs in

⁶ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

research, education, and communication. Historic and natural resources would be protected to preserve the Presidio as a sustainable national park. Open space would be expanded. Native plant communities and riparian corridors would be restored; the historic forest would be rehabilitated and preserved as part of the cultural landscape, and recreational opportunities would be increased. A substantial level of non-historic building demolition in the southern portion of the park would occur to enhance open space and restore critical habitat. Replacement construction would occur in the northern portion of the park to provide an improved mix of housing units and cluster housing near work and transit.

The Trust would be primarily responsible for delivery of a wide variety of high quality programs in cooperation with NPS, tenants, philanthropic organizations, cultural institutions, and community volunteers. Tenants would support park programming in a number of ways, including directly providing a public program for park visitors, contributing financially, or offering in-kind services to a park program. Tenants would be selected in part for their financial contribution (as required by the Trust Act) and willingness and ability to support park program goals. Land uses and description of land use preferences are shown in Figures 11 and 12.

2.9.2 LAND AND BUILDING USES

The Cultural Destination Alternative proposes to maintain the existing overall building square footage of 5.96 million sf with new construction balanced by building removal. At completion, this alternative would include approximately 4.1 million sf of mixed-use non-residential building space (community, office, cultural) and 1.9 million sf of residential space (houses, apartments, single room occupancy/dorm rooms). A description of building use preferences is shown in Figure 12.

While there would be no net increase in built space beyond what exists today, the distribution of built space would shift and be consolidated into already built up areas in the northern portion of the park. Crissy Field (Area B) and the Main Post Planning Districts would become mixed-use areas with a focus on visitor-centered community and cultural activity through a mix of museums, cultural/educational programs, lodging and other supporting uses. The use preference in the Letterman Planning District would be for mixed use office/residential. Substantial offsetting building removal would occur in the

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South Hills and East Housing Districts with the removal of Wherry housing, East and West Washington housing, and other non-historic units near Tennessee Hollow. Preferred uses within Fort Scott and PSH Districts would be for mixed-use institutional/residential. In these planning districts, potential improvements could be considered up to the proposed square footage shown in Figure 12. There would likely be no net change in built space within the PSH Planning District.

2.9.3 BUILT ENVIRONMENT

As with all alternatives, the NHLD status would guide what building changes would be made under the Cultural Destination Alternative. Most of the park's historic buildings would be rehabilitated for new uses in accordance with the Secretary of Interior's Standards for Rehabilitation. To enhance cultural and natural settings and provide additional opportunities for outdoor recreation, up to 1.37 million sf including up to about 810 housing units, would be removed. The majority of building demolition would occur in the southwest part of Area B. The number of residential dwelling units under this alternative would likely increase from the current 1,650 to about 1,700 units, while the residential square footage would decrease.

New replacement construction of up to 1.37 million sf, including up to about 900 replacement housing units, would provide new opportunities for visitor programs, residential uses, and lodging and community services. New construction would be designed and sited to be compatible with the historic setting. The majority of replacement construction would occur in the activity centers in the north to consolidate open space and move density closer to previously developed and disturbed areas, and transportation services.

Full implementation to the proposed square footage levels would depend on a variety of factors including historic and cultural resource constraints and future NEPA and NHPA evaluations of plans or proposals.

2.9.4 OPEN SPACE AND NATURAL RESOURCES

Under the Cultural Destination Alternative, open space within Area B would increase from the current 695 acres to about 807 acres, 13 acres more than the No Action Alternative (GMPA 2000). The acreage of native plant habitat would be expanded from 70 acres currently to about 207 acres. Management

actions would be similar to those described in the No Action Alternative (GMPA 2000).

In addition, the feasibility and scope of Crissy Field tidal marsh expansion into Area B in part or in whole as discussed in the No Action Alternative (GMPA 2000) would be evaluated through future site planning studies and environmental analysis. Identification of the appropriate expansion area would be based on such factors as cost, source of funding, land use options, building reuse feasibility, and cultural resource constraints including the location of historic buildings, potential archaeological sensitivity, hazardous substance cleanup, utility corridors, and the future Doyle Drive configuration.

2.9.5 CULTURAL RESOURCES

Under the Cultural Destination Alternative, protection and management of cultural resources would be similar to the Final Plan Alternative. Higher potential levels of demolition and new construction would place less emphasis on adaptive reuse or conversion of existing structures and relatively more emphasis on demolition and new replacement infill construction.

2.9.6 VISITOR EXPERIENCE

Under the Cultural Destination Alternative, site interpretation, resource education, and the provision of visitor programs would be similar to the Final Plan Alternative. Programs would be developed on the theme of Journeys – An American Experience from a Western Perspective. Selection of programmatic tenants and partners would emphasize ideas that uniquely define the Presidio including exploration/opportunity, mobility/innovation, and heritage/the arts. Through collaborations with arts and education partners, the Trust would provide flexible, short-term special exhibits and programs (such as traveling exhibits, festivals, lectures and music and arts events) as well as long-term resident programs such as (museums and educational/research institutes). Programs would be targeted at themes of interest to a national and international audience.

Based on proposed land use intensities, this alternative could attract up to approximately 19,800 daily visitors and about 7.2 million visitors annually.

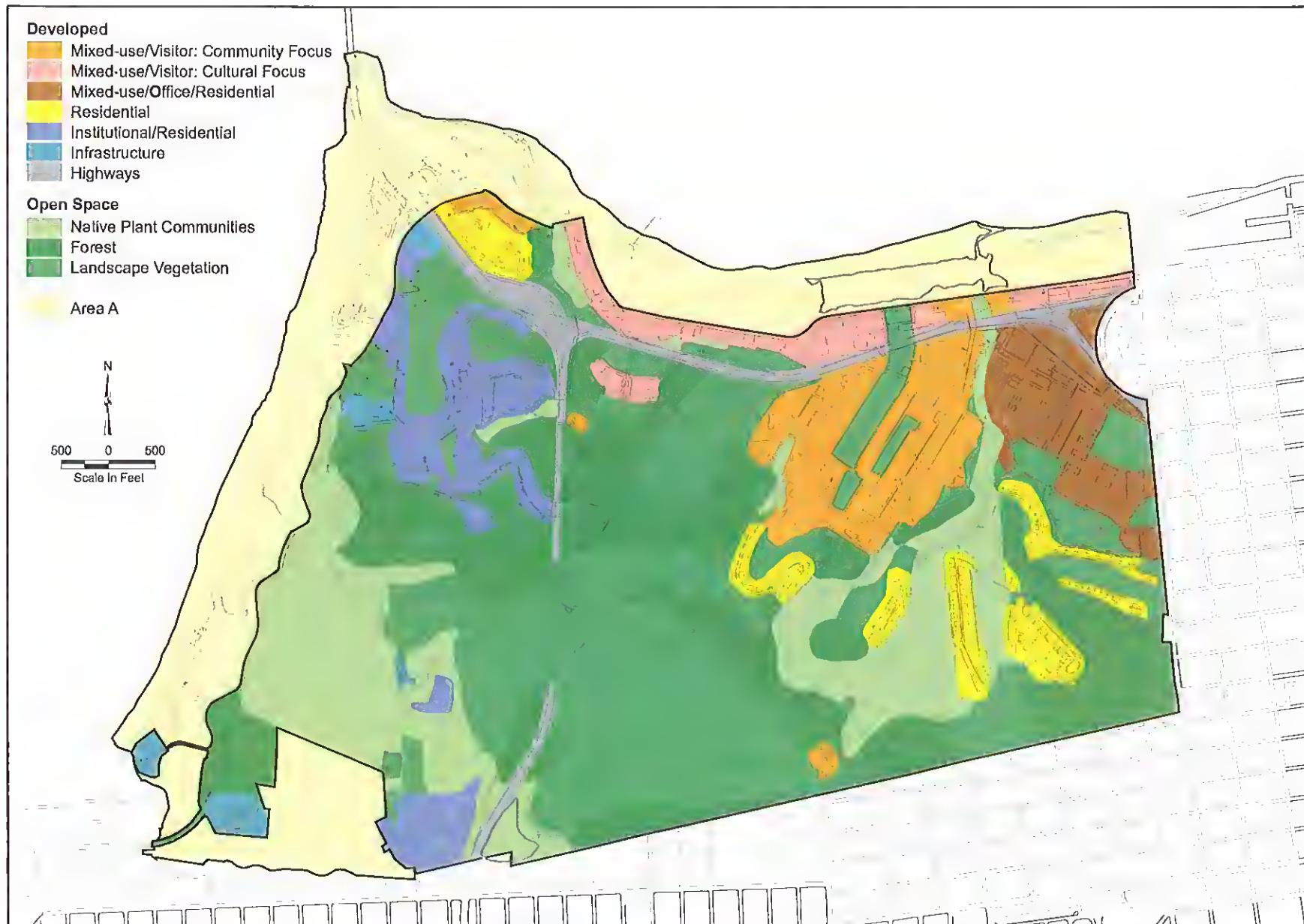


Figure 11: Cultural Destination Alternative

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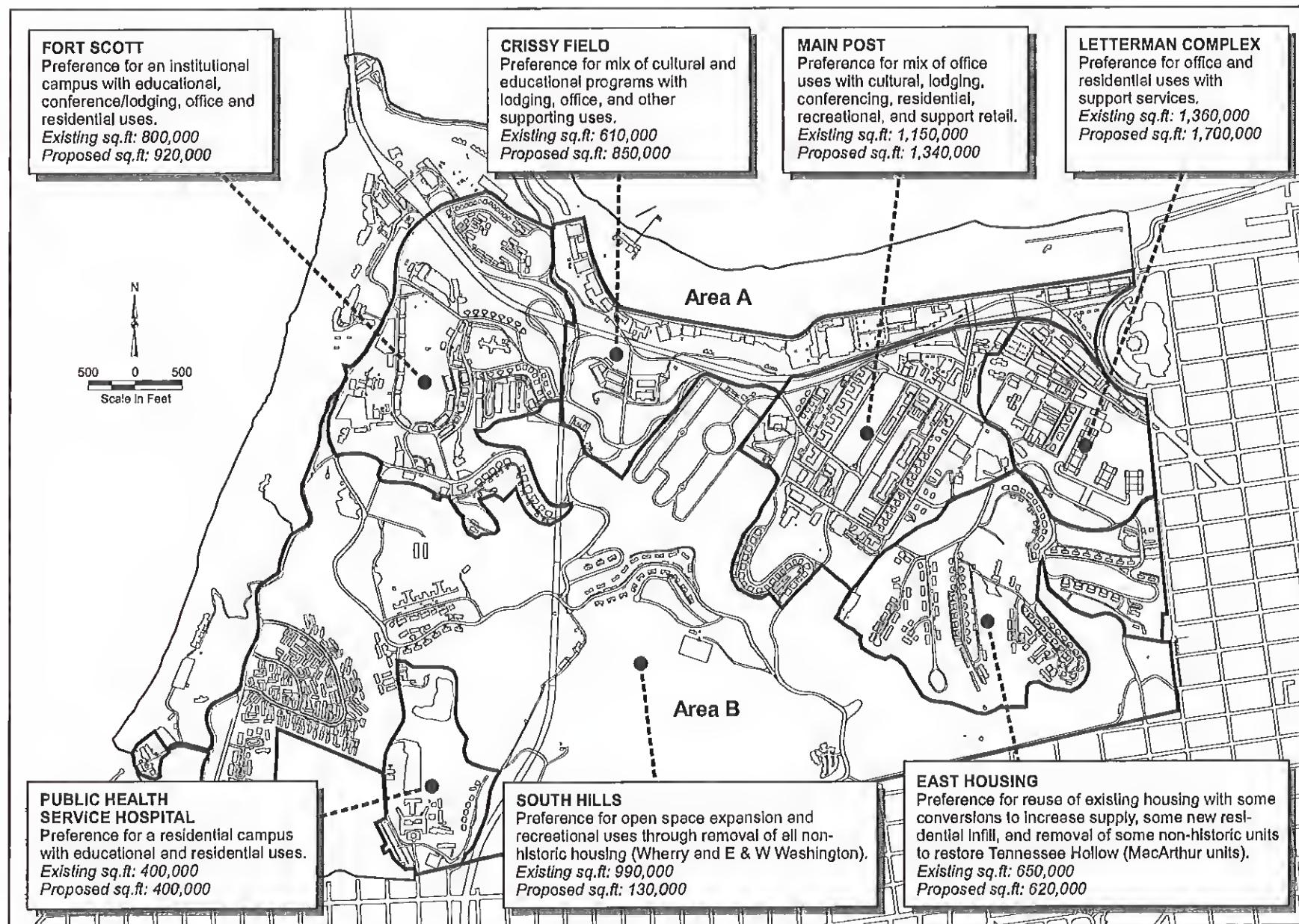


Figure 12: Building Use Preferences – Cultural Destination Alternative

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2.9.7 RECREATION

Under this alternative, recreation opportunities and management would be similar to the Final Plan Alternative.

2.9.8 COMMUNITY/HOUSING

The Cultural Destination Alternative would add about 50 housing units to the existing housing stock and provide a full range of housing for people who work at the Presidio to improve the jobs/housing balance. Housing would be clustered close to work and major activity areas. The housing supply would be diversified to provide a full range of unit types and would provide substantially more units than the No Action Alternative (GMPA 2000) (about 930 more units). Existing historic housing would be retained and rehabilitated. Non-historic units would be largely removed and replaced. In the long term, about 1,700 housing units would be available. Housing unit totals would be achieved through a mix of rehabilitation of existing historic units, conversions of non-historic space, and replacement construction.

New housing construction would provide an opportunity to locate more housing within walking distance of jobs, transit, and community services. Approximately 860,000 sf of non-historic housing dispersed throughout the Presidio (Wherry housing and East and West Washington housing) would be removed in phases and the square footage replaced in northern planning districts. To allow recovery of the endangered San Francisco *Lessingia germanorum*, removal of Wherry housing would be phased. Approximately one-third of the units (beginning with those above Pershing Drive) would be demolished by 2010, and the balance would be removed 2020.

Basic community services would be provided for residents and employees; most of these services would be available to visitors and park neighbors. Services would be located near work places and residential clusters to reduce the need for daily trips outside of the Presidio.

Under this alternative, the residential population by 2020 at the Presidio would number approximately 3,990. The number of employees would reach an estimated 7,840 in 2020.

2.9.9 TRANSPORTATION

Access, parking and circulation improvements under the Cultural Destination Alternative would be similar to the Final Plan Alternative. The parking supply would be reduced to 9,580 spaces and be reconfigured to serve Presidio activity centers. Parking and automobile use would be managed to reduce impacts on the park's natural, historic and recreational features and protect its open space qualities, and to avoid parking problems in adjacent city neighborhoods and along Crissy Field. A park-wide TDM program would be provided by the Trust and be supplemented by park tenants. Parking management, including permits and fee parking, would be actively used to manage parking demand and automobile use similar to the Final Plan Alternative.

2.9.10 INFRASTRUCTURE AND UTILITIES

Infrastructure and Utilities measures would be implemented as provided under the Final Plan Alternative.

2.9.11 FINANCE⁷

Financial modeling assumptions specific to the Cultural Destination Alternative include: a) Wherry housing would be removed in phases over a 20-year period, one-third by 2013 and the remaining two-thirds by 2020; b) park program expenditures would increase incrementally from \$2 million in 2006 to a stabilized level in 2020 of \$10 million annually; and c) approximately 23 percent of the non-residential space would be scheduled for use by cultural/educational tenants providing programs to park visitors.

This alternative would achieve self-sufficiency by the year 2013 - revenues would cover expenses by 2013 without further need of Congressional appropriations. The alternative has an anticipated capital requirement of \$562

⁷ Key terms (revenues, program costs, financing costs, capital costs, capital replacement fund (reserves), and self-sufficiency) are defined in the glossary to aid in the understanding of financial concepts. The financial planning model uses common assumptions to determine the relative financial performance of each alternative in terms of revenue generation and resulting time required to complete the capital program and fund reserves.

million. All capital investment for building rehabilitation and park improvements is estimated to be completed between approximately 2030 and 2035. The implementation phase at the Presidio fund is estimated to be completed in approximately 2040.

Reduced revenue assumptions and increased capital costs would have a negative impact on the financial performance of this alternative, but not to the same extent as with the No Action Alternative (GMPA 2000). If non-residential rental revenues decline by 10 percent and residential revenues decline by 5 percent, and all other modeling assumptions remain constant, this alternative would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed, and the implementation phase would be extended by about 20 years.

2.10 MINIMUM MANAGEMENT ALTERNATIVE

Under the Minimum Management Alternative, the Presidio would be managed to the minimum extent needed to meet basic legal requirements, including protection of the visiting public and the park's resources. There would be no significant physical change beyond that already underway; no significant park enhancements, no new building construction or building removal would occur. The 1994 GMPA would not be implemented in Area B. Buildings would simply be rehabilitated to meet essential code requirements, consistent with the Secretary of the Interior's Standards for historic buildings and then leased out for the highest and best use. Tenants would have discretion in offering publicly available programs, and preference would be given to those tenants proposing to offer programs or services consistent with the General Objectives of the GMPA. There would be no educational, visitor, or cultural programming beyond what already exists. The Wherry housing complex would remain in use indefinitely as housing. Housing would be improved to meet code and historic preservation requirements and made available for rent by Presidio-based employees and others according to a prioritization system. Natural resource systems would not be significantly enhanced. Anticipated land uses and description of land use preferences are shown in Figures 13 and 14.

2.10.1 LAND AND BUILDING USES

The Minimum Management Alternative would maintain the existing overall building square footage of 5.96 million sf, which is the maximum square footage allowable under the Trust Act. This would include approximately 3.5 million sf of mixed-use non-residential building space (office, visitor, institutional) and 2.4 million sf of residential space (houses, apartments, single room occupancy/ dorm rooms). A description of building use preferences is shown in Figure 14.

Under this alternative, the existing land use pattern would be retained without change. Buildings would be leased out for the highest and best use. For the purposes of the EIS analysis it is assumed that, consistent with existing/past uses, the preferred use in all northern planning districts and the PSHS Planning District would include mixed-use office, with an emphasis in the Main Post Planning District on community support and visitor programs in existing buildings and a preference at the PSHS for institutional use of existing buildings. Current residential clusters would be retained and reused and remain dispersed throughout Area B, with the exception of the Crissy Field (Area B) Planning District where no residential units currently exist. There would be no expansion of open space in the South Hills Planning District or elsewhere.

2.10.2 BUILT ENVIRONMENT

Aside from the LDAC project, there would be no demolition or new construction under this alternative, and existing structures would remain in their present configuration. Rehabilitation of all historic structures would comply with the Secretary of Interior Standards for the Treatment of Historic Properties. Historic buildings not suitable for rehabilitation would be stabilized, mothballed, and preserved. As part of rehabilitation, buildings would be modified to meet applicable codes, in accordance with the Presidio Trust Act. The Trust would ensure compliance with building codes as well as historic preservation regulations and would be responsible for enforcement.

2.10.3 OPEN SPACE AND NATURAL RESOURCES

Under the Minimum Management Alternative, open space would increase from 695 acres to 702 acres. Only those actions necessary to meet legislative

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requirements, such as the monitoring and protection of rare and endangered plant species and management of the historic forest, would be carried out. Management programs would be restricted to those that are already being conducted or are required for the protection of significant resources. Many of the features identified in the GMPA that are common to other alternatives, including restoration of the Main Post parade ground, would not be implemented. Existing native plant habitat and endangered species would be protected by averting direct threats. Ecological restoration efforts that are currently underway would continue, but would not expand into new areas as identified in the VMP. The Wherry housing complex would not be removed to allow native plant habitat enhancement. Approximately 400 acres of historic and non-historic forest would be minimally managed in its present configuration. The forest would not be replaced at the end of its biological life, and replacement vegetation would not be managed or controlled. Hazard trees would be addressed. Major projects to expand or improve open space would be limited to those called for in the Mountain Lake Enhancement Plan, and landscape improvements at the LDAC site. Native plant communities would continue to occupy 70 acres. An inventory and monitoring program of rare and endangered plant and animal species would continue. No stream restoration projects would occur.

2.10.4 CULTURAL RESOURCES

The primary activities affecting cultural resources under the Minimum Management Alternative would be the rehabilitation of historic buildings and adjacent landscapes for new uses. Historic and non-historic buildings would be rehabilitated to meet essential code requirements. Historic buildings and landscapes would be rehabilitated to meet the Secretary of Interior's Standards for Rehabilitation. The historic forest would be minimally managed as a contributing feature of the NHLD, and would not be replaced. Other contributing structures and features to the NHLD would be protected and preserved. Visitor impacts on sensitive cultural resources would be monitored and measures would be implemented to reduce impacts.

2.10.5 VISITOR EXPERIENCE

Under the Minimum Management Alternative, few actions would be taken to expand visitor opportunities beyond existing programs and services. Some existing programs would be discontinued. In accordance with the Presidio

Trust Act, the NPS would carry out interpretation and education activities at the Presidio. The William Penn Mott, Jr. NPS Visitor Center would continue to house a variety of interpretative services and media for park visitors. Other existing facilities that provide visitor information would continue to be used for this purpose, such as the Presidio Officers' Club or the Crissy Field Center. Additional way-finding kiosks and wayside interpretation signs would be installed only as needed for visitor orientation or resource protection concerns.

Park-based programs would continue to support natural areas' stewardship and education for residents, tenants and community members, but would be reduced in size and number as fewer native plant restoration projects would take place. Other programs, such as the pilot "At the Presidio" program, would be discontinued. Tenants would be encouraged, but not required, to provide public programs related to the park's purpose. Special events would be held periodically, but would not increase above current levels. No visitor accommodations or lodging would be provided.

Based on expected land use intensities, this alternative could attract up to approximately 17,900 visitors per day and about 6.5 million visitors annually.

2.10.6 RECREATION

Most existing recreational facilities, including athletic fields, playgrounds, tennis courts, hiking and biking trails, picnic areas, golf course, bowling alley, and gymnasiums would be retained for public use under the Minimum Management Alternative. Some existing recreation facilities could be removed in conjunction with other planning objectives or assumptions, such as the reconfiguration of Doyle Drive. There would be no new trails and bikeways. Trail rehabilitation and repair would only occur as needed to protect resources. Landscaped areas and small open spaces could be used for passive or informal recreation. No new recreational or educational experiences would be created.

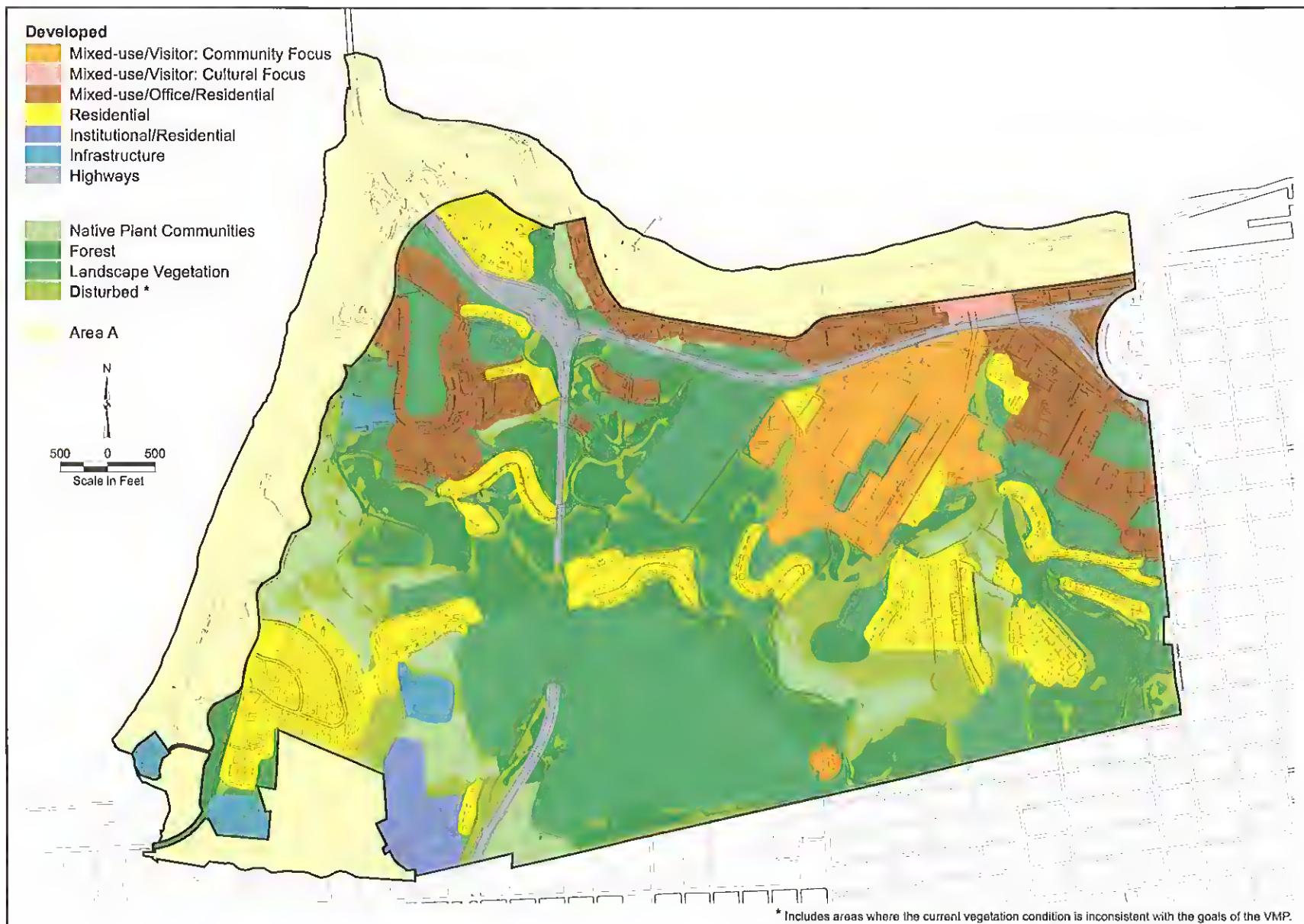


Figure 13: Minimum Management Alternative

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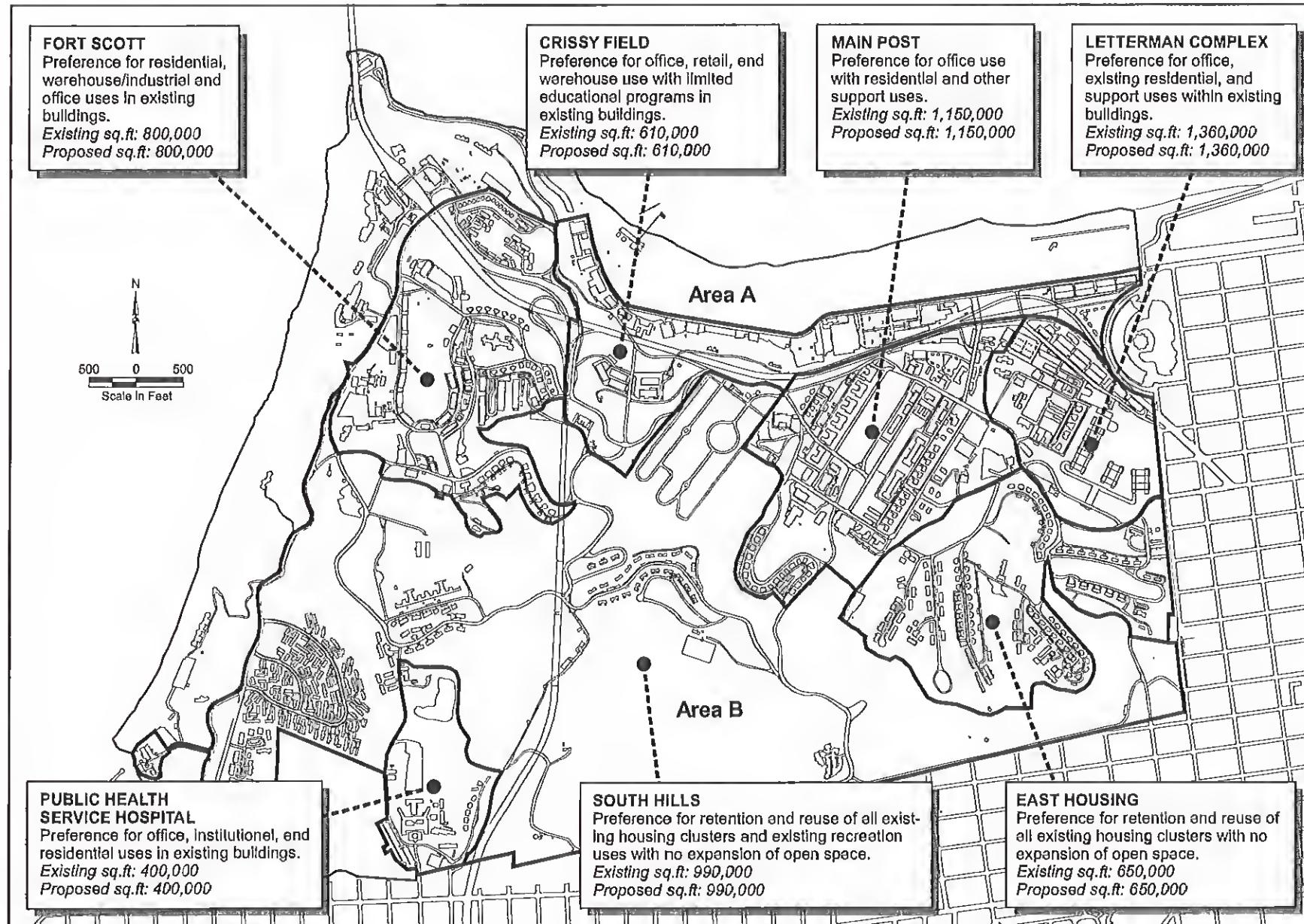


Figure 14: Building Use Preferences – Minimum Management Alternative

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2.10.7 COMMUNITY/HOUSING

Under the Minimum Management Alternative, existing residential units would remain in use, for a total of about 1,650 housing units, including Wherry housing. There would be no new residential construction and no housing would be removed. Conversion of existing buildings to residential use would be limited to the creation of dorm rooms. Housing would continue to be provided to the general public at market rates. If demand exists, housing could be converted to and leased for office space or other uses. Support services, including food service and other essential facilities, would be limited.

Under this alternative, the residential population at 2020 in the Presidio would be about 3,600. Employment would reach about 7,820 employees by 2020.

2.10.8 TRANSPORTATION

With the exception of Doyle Drive reconstruction and improvements associated with the 23-acre LDAC site, no other major road improvements would be undertaken under the Minimum Management Alternative. Minor improvements to address safety hazards and to promote pedestrian and bicycle use would be completed. Parking (11,210 spaces) would continue to be provided in currently designated areas and would not be actively managed. Existing public transit service would continue with no additional transit services or internal shuttle. Minimum TDM programs would be provided by park tenants.

2.10.9 INFRASTRUCTURE AND UTILITIES

Utilities in need of repair and beyond their useful life would be repaired and upgraded. Energy conservation measures to meet federal mandates would be pursued through the course of building rehabilitation.

2.10.10 FINANCE⁸

Financial modeling assumptions specific to this alternative are the same as those for the No Action Alternative (GMPA 2000) except: (a) Wherry housing would be retained indefinitely and not removed; and (b) approximately 2 percent of non-residential space would be scheduled for use by cultural/educational tenants providing programs to park visitors.

Under this alternative, revenues would cover expenses in 2013 without further need for Congressional appropriations. The total estimated capital costs under this alternative would be \$479 million. Because this alternative would generate substantial revenue from the indefinite retention of Wherry housing, emphasize leasing to the highest-paying tenants for the highest-and-best use, and involve little physical change within Area B, capital projects are estimated to be completed by 2016. The implementation phase at the Presidio is estimated to be completed in 2018.

Reduced revenue assumptions and increased capital costs would have the least effect on the financial performance of this alternative. If non-residential rental revenues decline by 10 percent and residential revenues decline by 5 percent, and if all other model assumptions remain constant, this alternative would remain self-sufficient and sustainable, and the time required to complete the implementation phase would be extended by a couple of years.

2.11 ALTERNATIVES CONSIDERED BUT REMOVED FROM FURTHER EVALUATION

The Trust's approach to developing a reasonable range of alternatives included consideration of three primary elements: 1) required elements of all alternatives (i.e., screening criteria); 2) common planning assumptions for all alternatives; and 3) key variables of the alternatives. For any alternative to be considered minimally viable, it had to meet the following minimum

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“screening criteria”: a) be consistent with the Presidio Trust Act and meet the Act’s financial mandate, i.e., be capable of achieving financial self-sufficiency no later than 2013 and be financially sustainable over the long-term; b) encompass Area B only, but be consistent with the GMPA for Area A; c) meet the General Objectives of the GMPA as required by Congress and adopted by the Trust Board in Resolution 99-11; d) preserve the Presidio as a national park; and e) meet the proposed planning principles.

Early in the scoping process, the Trust considered but rejected certain alternatives because they failed to meet one or more of the screening criteria. For example, the Trust considered developing an alternative with more square footage than currently exists within Area B. This alternative was screened out as unreasonable because the proposed square footage falls outside the Trust Act’s limits on the maximum amount of allowable square footage within Area B. The Trust also developed an alternative with minimal new construction, measures to enhance and increase open space, lower capital costs, and programs provided and paid for primarily by mission-related tenants, as was envisioned in the GMPA. This alternative was ultimately eliminated from consideration as being duplicative in some aspects with other alternatives and not as responsive to scoping commentors’ requests as the modified No Action Alternative (GMPA 2000).

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AFFECTED ENVIRONMENT

AFFECTED ENVIRONMENT

The Presidio

3.1 THE PRESIDIO

The resources of the Presidio are described in this chapter, along with the local and regional context, Presidio and surrounding uses, and the laws and policies that govern the Presidio. The Affected Environment provides the basis for the analysis of Environmental Consequences (Chapter 4).

3.1.1 OVERVIEW

The Presidio of San Francisco is at the northern tip of the San Francisco peninsula on the south side of the Golden Gate. On its southern and eastern boundaries is the city of San Francisco, on the west is the Pacific Ocean, and on the north San Francisco Bay.

The Presidio is almost centrally located within the San Francisco Bay Area. The region is predominantly urban, and population densities are high. The inland side of the peninsula, from San Francisco southward to San Jose, is dominated by large and small municipalities. Similarly, continuous development stretches northward from San Jose along the eastern side of the bay to Vallejo across from San Francisco. North of the Presidio, Marin County has residential and commercial development concentrated along the Highway 101 corridor and a large amount of permanent open space, a substantial portion of which is under the GGNRA management.

The Presidio spans 1,490 acres. It is a NHLD, and boasts structures from every major U.S. military construction period since 1848 as well as Spanish-colonial and pre-historic archaeological remnants from pre-historic times. It contains diverse ecosystems, a dynamic shoreline and wetland resources, and historic forests. It is home to native plant communities and several rare and endangered species. It includes spectacular views. The historical and natural resources of the Presidio are enhanced through the numerous cultural and education programs and facilities.

The Presidio has a tradition of community. Where once shared experiences of military families created a tangible sense of belonging, at present a contemporary live/work model is developing at the park. As with any community, there is a support structure of the transportation systems,

including bicycle and pedestrian systems, public safety including fire and police protection, and utilities.

The Presidio of San Francisco is part of the Golden Gate National Recreation Area and the national park system. The Presidio Trust manages the park in partnership with the National Park Service. The Trust has jurisdiction over the interior approximately 80 percent of the Presidio (Area B), including nearly all of its historic structures. The National Park Service manages coastal areas (Area A).

AFFECTED ENVIRONMENT

Cultural Resources

3.2 CULTURAL RESOURCES

With a history that begins in the pre-colonial period, the Presidio is rich in cultural resources. Cultural resources of the Presidio include historic resources, such as historic buildings, the cultural landscape, including the historic forest and strategic views, and archaeological resources, including prehistoric and historic sites. The Cultural Resources Affected Environment section discusses the history of the Presidio, and existing conditions as related to cultural resources.

3.2.1 HISTORIC/ARCHITECTURAL RESOURCES AND THE CULTURAL LANDSCAPE

The Presidio of San Francisco is one of the most historically and architecturally significant former military installations in the United States. The Presidio of San Francisco has flown the flags of Spain, Mexico, and the United States over its 225-year history as the most important military base on the West Coast, first strategically and later symbolically. When the Presidio was designated a National Historic Landmark (NHL) in 1962, it was recognized as a significant Spanish colonial military site in what was known as Alta California. Although the entire 1,490 acres of the former base were included, the only resource specifically identified was the Officers' Club (Building 50), due to the fact that it was reputed to contain the remains of adobe walls of the Spanish commandante's quarters. In 1985 the NPS working with the U.S. Army completed an Historic American Building Survey Study (HABS) of the U.S. Army-managed portions of the Presidio. Approximately 400 buildings and structures were classified into five categories, ranging from Category 1 -- directly contributing the National Historic Landmark District (NHLD) to Category 5-- intrusions to the district according to the contribution each made to the Landmark District.

In 1993, the NPS prepared new documentation on the Presidio NHLD identifying 662 contributing resources and 504 non-contributing resources. The Keeper of the National Register accepted the documentation on May 25, 1993. The following is a summary of the statement of significance of the NHLD nomination and Presidio-wide character defining features.

HISTORICAL OVERVIEW

Pre-Colonial, Pre-1776

The original inhabitants of the Presidio area were descendants of the Ohlone. Their numbers exceeded 10,000 in the coastal area between Point Sur and the San Francisco Bay. They traded freely, moved about the hills and lower marshes, made seasonal camps, and were dependent on the land and sea for food. The landscape at that time consisted of mostly stabilized sandy slopes that supported specially adapted low growing shrubs, wildflowers and grasses, and some pockets of native forest habitat including scrub oak, buckeye and madrone trees, with patches of laurel trees within the protected valleys and slopes. Saltwater marshes thrived along the bay shore (NPS 1992d).

Spanish/Mexican Occupation, 1776-1846

In 1776, as part of their northern frontier expansion, the Spanish established a strategic military outpost on the barren landscape of the Golden Gate. The three significant components of their settlement were the Castillo de San Joaquin, the "presidio," and the mission. The castillo, sited on the bluff above today's Fort Point, was built in 1793-94 to guard the entry to the bay, while the presidio was in a more protected area close to safe anchorage by the bay. The mission, sited further inland, was protected by the presidio and supplied the garrison with fresh crops. In 1846, after brief Mexican rule (1822-1846), the U.S. Army took over the land. At that time only ruins of the predominantly adobe Spanish settlement remained. From the first U.S. occupation to the outbreak of the Civil War, the Presidio underwent a slow transition from a Spanish-Mexican outpost to a small U.S. military reserve.

Early U.S. Occupation, 1846-1890

During the Civil War, the Presidio experienced a spurt of growth in response to threats posed by Southern sympathizers in California, Confederate commerce raiders, and increased Indian warfare throughout the West. Fort Point was built on the site of the former castillo and, together with the fortress on Alcatraz and minor batteries at Fort Mason and Angel Island, defended the Golden Gate. The Civil War reshaped the Presidio into a conventional U.S.

AFFECTED ENVIRONMENT

Cultural Resources

Army post with a central parade ground surrounded by barracks and a distinctive officers' row.

In 1866, Congress established six all-black regiments to help rebuild the country after the Civil War and to patrol the remote Western frontier. These troops became known as "the buffalo soldiers" and were stationed throughout the West, including the Presidio.

By the 1870s and 1880s, aesthetic concerns and a response to the encroaching city of San Francisco influenced the post's development. Plans were initiated to transform the barren landscape into a park-like, forested reserve. The forestation plan of 1883 was designed to "crown the ridges, border the boundary fences, and cover areas of sand and marsh with a forest," according to Major William Jones, the architect of the landscape plan. It was initiated to reinforce the idea of the Presidio as a separate place from the increasingly dense city. For a brief period during the Indian Wars, and again after the great earthquake, the Presidio housed the divisional headquarters for the West Coast. Also established were the national cemetery near the Main Post and the Marine Hospital just west of Mountain Lake.

National Expansion, 1890-1910

By the turn of the century, with the end of the Indian Wars, a major building campaign took place at the Presidio. Permanent brick buildings began replacing Civil War-era wood-frame quarters, barracks, storehouses, and stables and a new water plant was constructed at the mouth of Lohos Creek. New coast defense batteries of the Endicott period ringed the Presidio and a Coast Artillery subpost known as Fort Winfield Scott was established. By 1912, Fort Scott was fully developed as a post, with a collection of Mission Revival-style buildings and a horseshoe-shaped parade ground.

Transportation links between the Presidio and the city were established.

The U.S. Army's first permanent general hospital was established at the turn of the century known as Letterman General Hospital. The hospital served 1906 earthquake victims as well as troops returning from war in the Philippines. Following the Spanish American War, as a result of continued American involvement in the Pacific and an increase in recruits at the

Presidio, new wood-frame complexes (the east and west cantonments) were built east of the Main Post.

In 1903, the 9th cavalry troops of the buffalo soldiers left from the Presidio to patrol Yosemite, Sequoia, and General Grant (King's Canyon) National Parks.

World War I, 1910-1918

In 1915, San Francisco hosted the Panama Pacific International Exposition, a world's fair to celebrate the completion of the Panama Canal and San Francisco's post-earthquake reconstruction. After negotiating with the Army, the fair promoters leased Presidio marshland along the bay and filled it in to provide space for pavilions and a racetrack. In 1917, in response to the outbreak of World War I, a large cantonment of temporary buildings, including 81 barracks, warehouses, post exchanges, and storehouses to accommodate 6,000 soldiers replaced the exposition buildings along the bayfront. Two companies, the 61st and the 67th of the Coastal Artillery Corps of Fort Winfield Scott, transferred to France in 1917, and served in the antiaircraft battalion for the war effort.

Between the Wars, 1919-1940

Following World War I, new construction focused on the establishment of Crissy Army Airfield along the bay. The 1920s Mission Revival-style airfield structures were sited at the west end of the field. Building flourished throughout the reservation at the Main Post, Letterman Hospital, the east and west cantonments, the national cemetery, Fort Winfield Scott, and the Marine hospital. New officers' housing was built along Infantry Terrace in the Georgian Revival style. The Presidio's seacoast defenses remained relatively unchanged during this period.

The Depression and the construction of the Golden Gate Bridge in 1937 greatly affected the Presidio. Unemployment resulted in an increase in military enlistments as well as the utilization of Works Progress Administration (WPA) funds and labor for public works. WPA projects included two large concrete barracks along the eastern flank of the main parade ground. The resulting enormous growth of the Bay Area resulted in the erection of the Golden Gate Bridge. Its approach roads, viaducts,

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abutments, and toll plaza were all built on Presidio land. Many buildings were demolished, but others were constructed, including maintenance shops, gas stations, drainage and sewage systems, and several fire control stations for the seacoast defenses. Crissy Field was abandoned in 1936 as a primary aviation facility.

World War II, 1941-1946

During World War II, the Presidio served as headquarters for the Western Defense Command, which was responsible for protecting the entire Pacific Coast from attack by Japan. Building 640 on Crissy Field was the location of a Japanese American Unit of the Military Intelligence Services. The harbor defense command post for the reinforced defenses of San Francisco Bay was also located at the Presidio. The U.S. Army constructed several complexes of wooden temporary structures, mostly barracks, at Crissy Field, the Main Parade Ground, and the Letterman Hospital. The Letterman Hospital, unlike the remainder of the base, was very active during the war. It became the largest debarkation hospital in the country.

Building 35 on the Main Post housed the 4th Army Headquarters where Executive Order 9066 was issued, leading to the removal and incarceration of Japanese Americans from the West Coast states.

Post-World War II, 1947-1994

Activity in the Presidio declined sharply after the war, and building programs were primarily residential. In 1947, new family housing was constructed above Infantry Terrace. An exception was the signing of the U.S. Japan Security Treaty, which took place on September 8, 1951 at Building 135, now the Golden Gate Club. The Baker Beach District was built in 1953 on the southwest corner of the base. Remaining portions of Crissy Field continued to be actively used through 1974. This area has changed considerably since closing of the base, with demolition of numerous buildings and reconstruction of a tidal marsh. A new Letterman Hospital, which played an important role in the return of Vietnam veterans, was built adjacent to the historic Letterman Complex in 1969. It was complemented in 1974 by construction of the 350,000-square-foot Letterman Army Institute of Research. The Presidio

continued to house numerous commands, including that of the Sixth U.S. Army.

The character of the Presidio as a reserve has been respected through successive phases of historic development and endures to the present day. With certain exceptions, the placement and design of the Presidio's built environment respond to the topography and the natural character of the landscape. The buildings at the Presidio reflect an evolution of military design, a succession of stylistic effects popular during the various periods of Post construction. The architecture is unified by the military's basic and straightforward approach to construction and design. The approach generally has tended toward formal symmetry and eschewed excessive ornamentation. The buildings commonly stand in groups or rows and exhibit standardized designs of simple forms and moderate decorative detailing. Most of the buildings are of a moderate, human scale; few are in excess of two and a half stories.

The number of non-contributing resources within the NHLD is relatively large; however, many of these constitute small buildings and structures that are ancillary or supporting in nature. Given the breadth and prominence of the NHLD, with its hundreds of historic buildings and structures and striking landscape features, the integrity of the National Historic Landmark is exceptionally high.

Base Closure, National Park, Trust 1970-1996

In 1970, U.S. Representative Phillip Burton authored the legislation that established the Fort Point National Historic site. In 1971, he authored legislation to protect the natural, historic, social, and recreational values of the Presidio for public use in perpetuity if the U.S. Department of Defense ever declared the base to be in excess to its needs. When Congress established the GGNRA in 1972 (Public Law 92-589), which included the Presidio within its formal boundaries, NPS jurisdiction of the Presidio was not to be effective until military ownership and use of the reservation ended. However, management of 145 acres of Baker Beach and Crissy Field was granted to the NPS/GGNRA through an irrevocable permit. Restrictions on new construction were imposed on the property remaining under Army ownership

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to preserve the unique character and history of the site as well as valuable open space.

In 1989, the Base Realignment and Closure Act designated the Presidio for closure. When the U.S. Army departed in 1994, jurisdiction over the Presidio transferred to the NPS.

In 1996, the U.S. Congress created the Trust to preserve and enhance the Presidio in partnership with the NPS. Congress also mandated that the Trust become financially self-sufficient by fiscal year 2013. If the Trust fails in this mission, the park will be transferred to the federal General Services Administration and sold. In 1998, the Trust assumed management responsibility for the non-coastal areas (about 80 percent) of the Presidio including most of its historic structures. The NPS continues to manage coastal areas. The Trust is an executive agency of the U.S. government and a 501(c)3 non-profit corporation governed by a seven-member Board of Directors. The Trust Act and the general objectives of the General Management Plan Amendment (GMPA) guide its activities. Since the Trust has assumed control over Area B, the Trust has rehabilitated over 60 historic buildings on the Main Post and elsewhere, most notably Buildings 36, 50, and 220. Several have been rehabilitated by the Trust through private ventures using the Federal Rehabilitation Tax Credit, including Buildings 38 and 39. Historic residential buildings have been rehabilitated on Presidio Terrace, Kobbe Avenue, Portola Street and Liggett Avenue. Recent additional Trust achievements include restoration of the World War II Monument, construction of the Presidio segment of the Bay Area Ridge Trail, rehabilitation of the Presidio and Arguello gates, establishment of a recycling center, and environmental cleanup activities.

NATIONAL HISTORIC LANDMARK DISTRICT

In 1993, an update of the initial 1962 landmark nomination was completed by the NPS. The updated form establishes the boundaries of the NHLD as coinciding with the boundaries of the Presidio of San Francisco. It also defines 662 buildings, sites, structures, and objects related to the Spanish, Mexican, and American military history at the Presidio as contributing to the NHLD (NPS 1992d).

Since adoption of the GMPA in 1994, the NPS has demolished 37 historic buildings; 11 more historic buildings planned to be demolished under the GMPA are still standing. Under Trust management, fire destroyed Building 1055 and a heavy equipment accident has compromised the structural integrity of Building 633. In 2001, there are 432 buildings remaining in Area B that have been deemed to contribute to the NHLD (see Figure 15 and Appendix C).

Area B of the Presidio contains 730 buildings that represent a variety of military architectural styles dating from the Civil War to the present. Of the buildings and resources in both Area A and Area B of the Presidio identified in the 1993 National Historic Landmark nomination, there were 1,166 total, (662 contributors and 504 non-contributors). The facilities included two hospitals (both closed), a major research institute (also closed), 1,200 housing units, airfield structures, harbor and coastal defense structures, a Mission Revival-style coastal artillery subpost, a former U.S. Coast Guard station, former cavalry stables, a commissary, a post exchange, and many other support facilities.

The extensive system of coastal defense emplacements located primarily in Area A is one of the best single collections of mid-19th and early-20th century defense works in the nation. By 1994, these buildings were generally in poor or critical condition due to earthquake damage, exposure and weathering, and lack of use/occupancy. The NPS conducted a study of these resources, *Historic Resource Study Seacoast Fortifications of San Francisco Harbor Golden Gate National Recreation Area California*, in 1979.

The 1993 NHLD is divided into 12 discrete planning districts, which represent different topography, cultural landscape features, and historic/architectural periods. These planning districts are: Baker Beach, Cemetery and Cavalry complex, Crissy Field, East Cantonment, Fort Point, Fort Winfield Scott, Letterman Complex, Main Post, Marine Hospital, North Cantonment, South Post, and West Cantonment. For PTMP, these districts have been consolidated into seven planning districts, which are PSH, South Hills, Fort Scott, East Housing, Main Post, Letterman, and Crissy Field. Character defining features for each planning district have been developed as part of

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PTMP in order to preserve the integrity of the NHLD as design-level land use and project decisions will be made in the future.

The themes of national significance represented in the Presidio NHLD are military, exploration and settlement, Hispanic heritage, and historic archaeology. The NHLD period of historical significance is 1776 to 1945. The noncommissioned officers' and enlisted men's club (Building 135) was constructed in 1949, outside the period of significance; however, it has been identified as a contributing structure in the NHLD as the site of the signing of the U.S. Japan Security Treaty in 1951. Fort Point, already part of the Presidio of San Francisco National Historic Landmark, was individually designated as a national historic site on October 16, 1970. Also individually listed on the National Register of Historic Places are the six-inch rifled gun no. 9, entered February 7, 1979, and the National Cemetery, entered in October, 1996.

Historic Buildings

The NPS conducted an initial survey and condition assessment of all Presidio buildings in 1990 and 1991 to identify the number of buildings, their general condition, and major deficiencies. In 1991, the buildings were reported to be, for the most part, in good to fair condition (NPS 1992c). The most noticeable deficiencies were related to compliance with national, state, and local life/safety codes, in particular seismic strength, fire egress, and accessibility. Individual building components or features, such as roofs, were generally in fair condition. The condition of historic fabric, both exterior and interior, varied from building to building. Overall, the historic buildings retained a high degree of integrity and contributed to the National Historic Landmark status. Interiors were not surveyed for the National Historic Landmark update; however, subsequent investigations indicated varying levels of integrity. Some buildings had been completely gutted; others, particularly housing, retained much of their original interior building fabric. A few buildings, particularly pre-1933 unreinforced masonry structures, had been seismically retrofitted, though not always to current standards. Most buildings were inaccessible to people with disabilities.

Additional building studies since 1991 include an analysis of about 45 historic buildings for their adaptive use potential (ARG 1992); a review of the Army's

asbestos survey (Ace Pacific Co. 1991); a limited feasibility study of the PHSH complex (ARG 1991); and a series of building condition assessment reports (ICAP Repairs) prepared in 1993. This study was followed up by a set of guidelines for rehabilitating buildings at the Presidio, which was prepared by ARG in 1995. In 2000, Page & Turnbull, Inc. prepared a reuse study for more than fifty buildings in Categories 2-5 in the 1985 HABS Study of the Presidio.

Cultural Landscape

The interaction of people and place over time creates a cultural landscape that is made up of components such as topography, vegetation, structures, circulation networks, land use patterns, building clusters, and small-scale features such as signs and flagpoles. Cultural values are reflected through development. The Presidio's cultural landscape provides a means for understanding individual features, such as buildings and roads, within a larger context or setting. The Presidio's cultural landscape retains a high degree of integrity and is important to the NHLD.

A cultural landscape inventory, evaluation, and analysis was prepared in 1991 by Land and Community Associates. This project examined the evolution of the built environment of the Presidio from pre-European settlement to the present and analyzed historic and existing landscape components to determine significant, character-defining landscape features. This has provided the basis for additional cultural landscape studies including the *Cultural Landscape Management Plan* and the *Draft Cultural Landscape Inventory Reports* and the VMP.

Based on the cultural landscape analysis, 28 major areas and 323 subareas were identified and mapped throughout the entire Presidio. The following is a summary of the Presidio's landscape components (Land and Community Associates 1992).

Topography - In some locations the topography creates a sense of enclosure. Particularly noteworthy are the swale east of the Main Post known as Tennessee Hollow and the small valley that contains the Cavalry Stables. El Polin Spring is an intimate topographic amphitheater that has been compromised by the encroaching non-historic housing complex.

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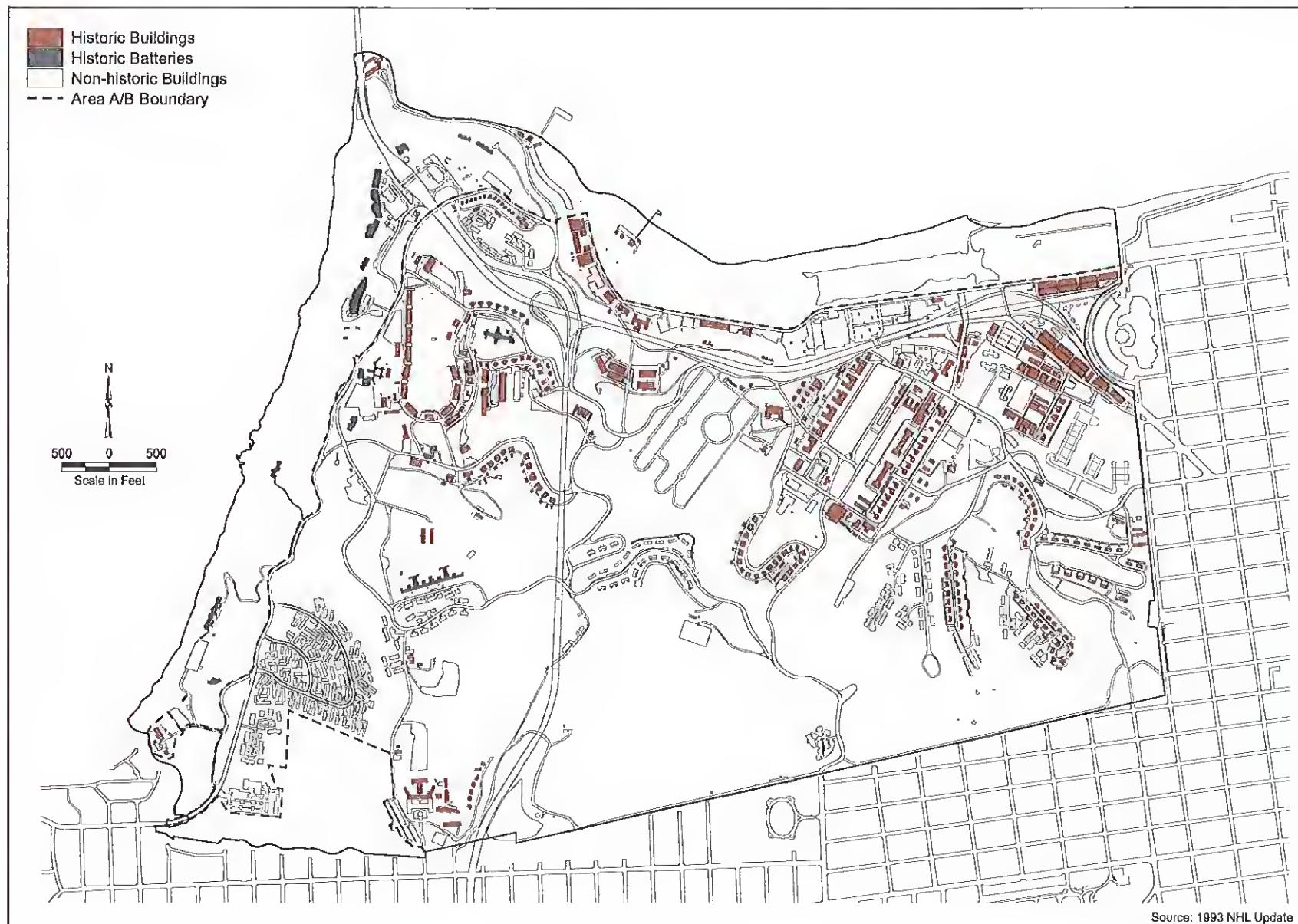


Figure 15: Historic Structures

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Historic Forest - The historic forest is one of the most noteworthy features of the cultural landscape. Conceived in the 1880s, the forestation effort was an attempt to ameliorate harsh environmental conditions and stabilize the migrating dunes. It was also a reflection of the U.S. Army's relationship with the neighboring city and was a product of turn-of-the-century landscape philosophy. The forest was to "crown the ridges, border the boundary fences, and cover major areas of sand and marsh with a forest" that was to "seem continuous and thus appear larger than it really was" (NPS 1992b). Today the forest is a treasured green swath in an urban context. Composed largely of Monterey pine, Monterey cypress, acacia, eucalyptus, and redwood, the Presidio forest has matured, is in critical condition, and will require extensive management and replanting to survive. Rampant growth, irregular pruning, and uncontrolled expansion of volunteer species has resulted in blurred boundaries of the historic forest and has obscured historic vistas and viewsheds.

Strategic Views - One of the factors that affected site selection and orientation of building clusters was strategic views. Development capitalized on waterfront views, primarily for defense of the Golden Gate. In addition to views out of the Presidio, there were visual links between different areas and building clusters. Examples are the views between the main parade ground and Crissy Field, and between the Officers' quarters on Infantry Terrace and the main parade ground. Today many of these significant vistas have been obscured by vegetation and new construction.

In addition to strategic vistas and view corridors, several buildings, structures, and landscape elements were designed and built as focal points. Examples include Building 1201, the headquarters at Fort Scott, and entry gates. Significant streetscapes, designed landscapes, and lawns remain scattered throughout the post. Many view corridors to the focal points have been interrupted by vegetation and new construction.

Historic Land Use - Most of the historic land use designations around the Presidio had persisted until the closure of the base in 1994. One example is the continued administrative role of the Main Post.

Within built areas, most of which contain mixed uses, there occasionally is an inconsistent pattern to the development, such as the variance in mass and

height of adjacent buildings and type of building materials and colors seen at the Letterman Planning District. This inconsistency was usually the result of interventions after the period of significance. Gradually some of the more egregious examples of incompatible non-contributing development are being removed, including the two large late 1960s-era Letterman buildings, Letterman Army Medical Center (LAMC) and Letterman Army Institute of Research (LAIR). These particular structures will be replaced by the LDAC, which will be compatible in design with the NHLD.

Structures and Building Clusters - The historic architecture of the Presidio is a character-defining feature of the district and displays a rich variety of designs, materials, and periods of construction. The approach generally has tended toward formal symmetry and eschewed excessive ornamentation. The buildings commonly stand in groups or rows and exhibit standardized designs of simple forms and moderate decorative detailing. As stated earlier, most of the buildings are of a moderate, human scale. The architectural character of some of the newer buildings is often not in keeping with these historic patterns. Most groupings of historic buildings have a residential character with a comfortable human scale. Buildings typically range from one to three stories; taller structures typically were integrated into the landscape to fit in with adjacent structures and appear smaller.

Small-Scale Features - The historic landscape had many small-scale features, including cannon balls for curbing. Though many stone retaining walls and ditches remain, most of the small-scale site elements have been replaced with contemporary materials. Landscape and site system details such as signs, lighting, plantings, fencing, curbing, and street furniture were varied and uncoordinated from site to site.

Circulation Networks - Most roads and paths that exist today were constructed before 1918. These corridors were sensitively built on the hilly terrain and help to define area boundaries. They show how the land was used and how areas were connected to one another. Most have retained their original alignment and width. The Presidio roads were not designed for the contemporary automobile. They are narrow, curvilinear, indirect, and have a park like quality. Portions of historic circulation corridors were lost during the construction of the road approaches to the Golden Gate Bridge and the

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Letterman Planning District. In some cases, original grades and road traces for former trolley lines are evident, as are the rail lines at Crissy Field.

3.2.2 ARCHAEOLOGY

PREHISTORIC SITES

Prehistoric sites are classified by archaeologists as the physical evidences of Native American occupations prior to European colonial contact. These native peoples and their descendants were the first inhabitants of the Presidio. Today some of the descendants are known as the Ohlone. It is likely that the Ohlone and culturally similar populations occupied this part of the San Francisco Bay area for at least two to three thousand years prior to its colonization by the Spanish and possibly much earlier.

Prehistoric sites at the Presidio are not identified as contributing to the NHLD, because they are not associated with the military history that forms the basis of Landmark designation. However, prehistoric properties could be individually eligible for the National Register of Historic Places.

Discoveries of prehistoric seasonally occupied and perhaps permanent prehistoric sites are likely to be present. Known or suspected archaeological resources are shown in Figure 16. The three recorded prehistoric sites at the Presidio, all within the Crissy Field Planning District, are designated as SFr-6, SFr-26, and SFr-129. SFr-6, the Crissy Field shell mound, was recorded in 1912. This was one of the first prehistoric sites listed in the California archaeological site inventory for San Francisco County. In 1972 when a single buried individual was discovered beneath concrete and fill in the motor pool area, although that discovery was designated SFr-26. Carbon dating has placed the burial at about A.D. 740. In 1998, SFr-129 was discovered during the NPS construction of the new Crissy Field wetlands.

Based on archaeological discoveries within the city and county of San Francisco, it is possible that additional subsurface sites are present within the Presidio. The sites would probably be shell middens with potential to contain human burials and related materials; archaeological features representing (but not limited to) house floors, cooking areas, and specialized work areas; and random and various artifacts of stone, bone, and shell. As a result of two

centuries of military development and early relic collecting, there are few, if any, surface indications of prehistoric archaeological sites. Early 20th century archaeological inventories concentrated on the coastal environment; sites would most likely be near the former littoral, where aquatic foods were available, or near freshwater springs. However, it is possible that sites other than shell middens are present in or along the bluffs and in other areas away from the shoreline.

The potential for discovering additional prehistoric archaeological resources at the Presidio is high. As indicated above, some prehistoric remains have already been documented, and seasonally or permanently occupied prehistoric sites are likely because of the extensive freshwater resources and the large estuarine lagoons and sloughs that once extended along the waterfront areas. In addition to the known sites along Crissy Field, several areas have been identified as archaeologically sensitive for the discovery of prehistoric sites. These are the Estuary Bluff, which overlooks the former marshlands along the Letterman Planning District, the North Cantonment, the Main Post, the Cemetery and Cavalry Stables, additional areas of Crissy Field, and the Presidio's natural fresh water sources, such as El Polin Spring, Mountain Lake, Tennessee Hollow, and Lobos Creek.

HISTORIC SITES

Historic sites are the physical evidences, usually augmented by written documentation, of the Spanish, Mexican, and American occupations which began in 1776, and could also include evidence of the Ohlone and other native peoples who occupied the Presidio in the 18th and 19th centuries. In the 1993 draft NHLD update, the Presidio was defined as a single historic archaeological site with numerous contributing features, both known and predicted, that are functional components of a single long-term military occupation. The historic archaeological properties described represent a variety of types ranging in complexity from individual features to functional groupings of features. Historic archaeological resources are known to exist and are concentrated at various locations throughout the Presidio.

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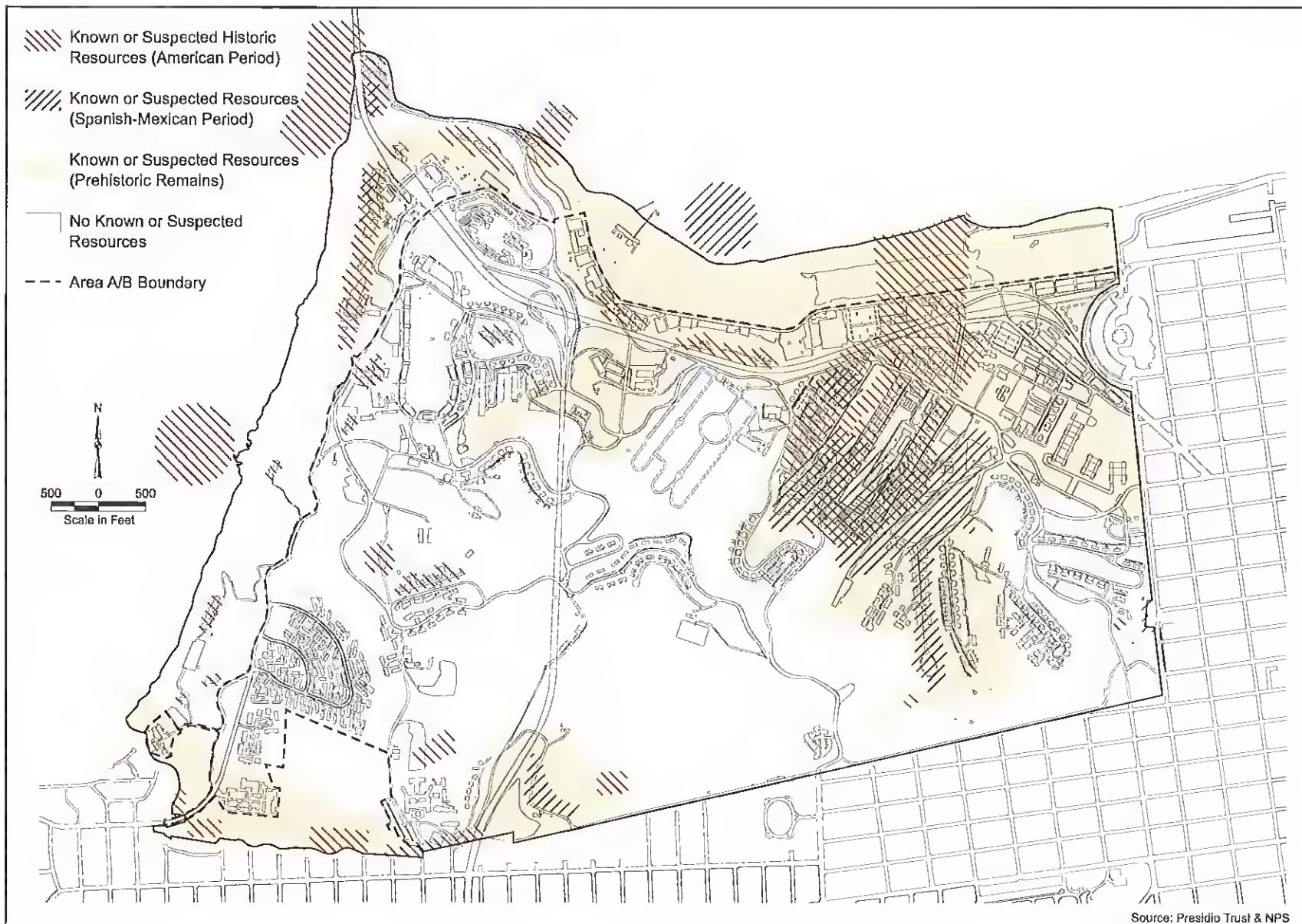


Figure 16: Potential Archeological Resources

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Both the known and predicted historic archaeological features at the Presidio, shown in Figure 16, contribute to the NHLD and are of national significance. Research suggests that historic archaeological remains from the period 1776-1890 would provide the most significant contribution to knowledge of the Presidio (NPS 1993). By 1890, the Presidio was beginning to change substantially, and documentation of design and construction was more complete. The archaeological features dating from about 1890 and into the present century, although they might contribute to information about military, social, and technological history, would often be ancillary to other sources, including documents, physical remains, and possibly oral history.

A comprehensive archaeological survey for historic sites has not been conducted at the Presidio, although archaeological monitoring or testing has taken place for specific projects. A traditional archaeological pedestrian survey is not feasible where the ground surface is obscured by pavement, buildings, and vegetation. The Trust is attempting to locate subsurface sites in areas of poor visibility or potentially buried sites prior to construction through the use of other techniques such as coring, trenching, and remote sensing. The Trust is also looking at geomorphological data that might explain natural processes and human activities that have altered the Presidio's landscape, and buried archaeological sites in certain locations. Archaeological management assessments have been developed based on historical research and limited surveys. These management assessments guide the archaeological investigations required for specific project or maintenance actions.

Since 1989, archaeological monitoring and preconstruction inspections have systematically been completed for most actions involving ground disturbance. The locations of the archaeological monitoring and the recorded information are being entered by the Trust in cooperation with NPS into a Presidio-wide database known as the Presidio Archaeological Grid. The Grid divides the Presidio into 50-meter increments and allows archaeologists to make informed decisions about the likelihood of the presence archaeological resources in a particular area prior to the approval of ground-disturbing activities.

PREDICTED ARCHAEOLOGICAL FEATURES

A Predicted Archaeological Features map, prepared for the National Historic Landmark update in 1993, was developed as a planning tool to guide future investigations and is continuously updated. This map indicates the zones of highest probability for suspected historic archaeological resources. Specific features have been mapped, with some spatial allowance for error among historic maps and for the expected subfeatures associated with a structure or building (e.g., privies, trash scatter) that would yield significant information but that would not have been noted on most historic maps. There are 50 predicted archaeological features identified in the 1993 NHLD update. These are shown by geographic area in Table 3.

The history of the Marine Hospital and Presidio are intertwined both in the development of reservation lands and in the provision of services to the community. As a civilian facility, the Marine Hospital provided free medical care, both short-term and convalescent, to merchant marines. While none of the buildings remains from the original 1870s complex, the site has been continually used as a marine hospital for more than 100 years, from its 1875 opening to closing in 1981 under the United States Public Health Service. Subsurface remains of the cemetery associated with the early history of this facility do exist, and lie largely beneath an extensive paved court and parking area located on the rise near the northeast corner of the tract. Historical research suggests that a substantial cemetery once existed behind the old Marine Hospital, demolished in 1934. While records could not be found to determine that the burials of the cemetery had been relocated, the Army assumed that a relocation had taken place. In 1990 the Army conducted a test excavation in an area presumed to have been the Marine Hospital cemetery and found the remains of two burials below almost 15 feet of concrete rubble. Historical research suggests that approximately 500 to 600 individuals remain interred in the cemetery.

Archaeological monitoring and testing, begun as part of the U.S. Army's infrastructure repair and environmental remediation at the Presidio, and continuing today through the Trust and NPS, demonstrate that construction has resulted in substantial alterations in original landforms, which have probably preserved as well as destroyed some archaeological resources.

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Table 3 Predicted Archaeological Features

No.	Name/Function	Date	Locality	Notes
Main Post				
F1	El Presidio de San Francisco	1776-1846	MP	continues into American period
F2	Spanish/Mexican cemetery	1776-1860	MP	
F9	United States Quadrangle West Side	1846-1890	MP	
F14	United States Quadrangle East Side	1862-1890	MP	Funston Avenue Officer's Quarters, Corral, Hospital
F16	Non-Commissioned Staff Quarters	1866-1890	MP	
F17	Sutler Residence	1866-1890	MP	
F18	Laundress and Enlisted Quarters	1866-1890	MP	
F19	Sutlery	1866-1890	MP	
F20	Stream Revine Dump Area	1866-1910	MP	
F21	Quartermaster Complex	1866-1890	MP	stables, blacksmith, shops, bakery, storehouse
F22	Main Post Water Control	1866-1890	MP	reservoirs, gravity feed to early quadrangle
West Cantonment				
F3	El Polin Spring	1776-1846	WC	adobe well and various land uses
F4	Extra-Quadrangle Habitations	1820-1846	WC	Hispanic and Russian construction
F12	Queen Bee/El Polin Water Control	1857-	WC	earthworks, wells
East Cantonment				
F5	Rancho Ojo del Agua de Figueroa	1830-1846	EC	rancho buildings and features
North Cantonment				
F28	Presidio Wharf II	1866-1890	NC	
F29	"Herman's House"	1866-1890	NC	
Letterman Complex				
F30	"Presidio House"	1866-1890	LC	hostelry
Marine Hospital (Public Health Service Hospital)				
F10	Lobos Creek Water Control	1857-	MH	tunnel
F34	Marine Hospital and Cemetery	1874-1932	MH	
South Post				
F31	Unidentified Farm/Residence	1866-1890	SP	
F32	Unidentified Farm/Residence	1866-1890	SP	
F33	Unidentified Farm/Residence	1866-1890	SP	
Fort Winfield Scott				
F15	Telegraph Hill Telegraph Station	1861-	FWS	
F38	FWS Ordnance Storage and Shops	1891-1914	FWS	
F40	Battery Howe/Arthur Wagner	1893-	FWS	
F41	Battery Safford	1895-	FWS	
F42	Battery Dynamite	1895-1904	FWS	
F44	Battery McKinnon/Slotsenberg	1897-	SP/ FWS	
Cemetery and Cavalry Complex				
F6	<u>San Carlos</u> Shipwreck (Area A)	1797	CF	aka <u>El Filipo</u> – sank at anchorage
F25	Laundress' Quarters	1866-1890	CF	

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Table 3 Predicted Archaeological Features

No.	Name/Function	Date	LocaL	Notes
F26	Presidio Wharf I	1868-1890	CF/ NC	
F47	Batteries Sherwood and Blaney	1900-	CF	includes location of Batteries Slaughter (1898) and Baldwin (1900)
F49	Life Saving Station I (Area A)	1890-1914	CF	
Fort Point (Area A)				
F7	Fort Point	1853-1890	FP	
F8	Fort Point Wharf Area	1853-1890	FP	
F13	Golden Gate/Fort Point Shipwrecks	1852-1877	FP	<u>Samoset</u> (1852), <u>Aberdeen</u> (1853), <u>Golden Fleece</u> (1854), <u>Chaleau Palmer</u> (1856), <u>General Cushing</u> (1858), <u>Granada</u> (1860), <u>Isaac Jeanes</u> (1876), <u>Frank Jones</u> (1877)
F23	West Battery	1870-1896	FP	
F24	East Battery	1873-1898	FP	
F37	Battery Marcus Miller	1891-	FP	
F39	Battery Godfrey	1892-	FP	
F43	Battery Lancaster	1896-	FP	
F45	Battery Bouteille	1898-	FP	
F46	Battery Cranston	1898-	FP	
Baker Beach (Area A)				
F11	Lobos Creek Water Control	1857-	BB	dam, reservoir, flume
F35	Viscata Shipwreck	1868	BB	
F36	Battery Crosby	1890-1914	BB	
F48	Battery Chamberlain	1902-	BB	
F50	Unidentified Scow Wreck	1902-	BB	

Note:

Locations: BB – Baker Beach; CCC – Cemetery and Cavalry Complex; CF – Crissy Field; EC – East Cantonment; FP – Fort Point; FWS – Fort Winfield Scott; LC – Letterman Complex; MP – Main Post; MH – Marine Hospital; NC – North Cantonment; SP – South Post; WC – West Cantonment

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The VMP was formulated within the context of the GMPA. The VMP was prepared jointly by the Trust and NPS, with the environmental review process and final publication completed in December 2001. Restoration strategies and mitigation measures in the VMP were adopted by the Trust through the signing of a Finding of No Significant Effect by the Trust Executive Director. The plan guides the management of all native and introduced vegetation by the organizations operating within the Presidio. The VMP divides the Presidio's vegetation resources into the three landscape types (native plant communities, historic forest, and landscaped - Figure 17), based upon resource characteristics and values, historic land uses, and practical management concerns. For example, the Historic Forest Management Zone is generally the area that was planted as a result of the forestation plan, as estimated from the extent of the original planted forest. The delineation of this zone was based upon 1935 aerial photographs and records. This zone will be managed to preserve and rehabilitate the health and sustainability of the forest stands. Trees also exist in the two other vegetation zones, landscape and native plant communities, and will be managed accordingly to the objectives set forth in the VMP. For example, "to ensure the protection and expansion of remnant native plant communities and special-status species... and their remaining habitat from past development,... non-native species, and non-native trees outside of historic forest management zone would be removed."(VMP, p.21)"

VMP objectives for management of the Native Plant Communities Zone, covering about 394 acres on the Presidio, are:

- to protect and enhance existing native plant communities and their remaining habitat by removing threats to native species, repairing damage to habitat, and increasing reproductive success; and
- to restore and enlarge native plant communities by reclaiming habitat from past development.

These objectives would be accomplished by the implementation of a long-term community-based habitat restoration program and by developing protective buffer areas between native plant community and historic forest management zones.

Management objectives for the 264-acre Historic Forest Management Zone include:

- to maintain the unique cultural landscape and character of the historic forest as guided by the NHPA;
- to preserve healthy trees;
- to rehabilitate the aging forest;
- to increase structural and species diversity, and encourage natural regeneration; and
- to protect and enhance valuable forest wildlife habitats.

VMP objectives for the 778-acre Landscape Vegetation Management Zone are:

- to maximize sustainable practices in plan development, implementation, and maintenance of landscape vegetation projects;
- to identify, document, and map historic and existing landscape plantings and plant species;
- to retain existing historic landscapes and historic plants whenever feasible;
- to select appropriate replacement plant material considering historic use, design intent, function, potential impacts to native plants, and sustainability;
- to identify and treat hazardous tree conditions; and
- to identify and maintain heritage landmark trees.

The VMP also designates a Special Management Zone in the southwest area of the Presidio, which is subject to further planning before a determination of treatment is made.

History of Vegetation on the Presidio

Historically, natural communities thrived throughout the Presidio and occupied sandy habitats of dune origin, particularly in the Lobos basin, serpentine-derived uplands or cliffsides exposed to the ocean, and serpentine slopes on the western Bay side of the Marina basin. Both dune and serpentine soils supported many specially adapted plant species, some of which are largely or exclusively restricted to these soil types. At one time, stands of native forests composed of prominent groves of coast live oak, California bay, madrone, and California

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Figure 17: Vegetation Management Plan and Wildlife Corridors

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buckeye, could have been scattered within pockets of the Presidio (Vasey 1996). Now the only native upland tree-dominated community, coast live oak woodland, occupies about six acres (Presidio Trust 2001).

Native plant communities on the Presidio currently consist of approximately 171 acres of remnant and restored indigenous natural vegetation (Vasey 1996, Presidio Trust 2001). Recent restoration efforts have increased native vegetation by approximately 10 acres at Lobos Dunes, 5 acres at Feral Dunes, and 25 acres at Crissy Field.

Because the distinctions between plant communities boundaries are often not clearly defined on-site, synonymous names used to identify vegetation resources by varying authors of past reports prepared for the Presidio are given in parentheses. Further information about the native plant communities continued below is contained in the GMPA and in the VMP.

Native Plant Communities

Native plant species and communities are those that occurred as a result of natural processes on the Presidio and its general vicinity prior to European settlement. Approximately 90 percent of the native vegetation of the Presidio has been displaced by the initial forest plantings and their subsequent expansion, previous Presidio land management activities, urban expansion, and the spread of invasive exotic species. Native plant species and communities on the Presidio have undergone progressive degradation because of habitat fragmentation, ecosystem conversion from sand and serpentine-based vegetation communities to artificial forest, and competition from invasive exotic species. The Presidio's remaining native plant communities currently occupy approximately 10 percent of the Presidio land area (171 acres) occurring primarily on west- and north-facing coastal bluffs extending from Crissy Field to Baker Beach, and as scattered habitat fragments in the southwestern and southeastern portions of the Presidio. Although most of the Presidio's remaining natural communities are small, and often isolated, they provide an essential refuge for a diversity of native plants communities and associated special-status plant species, some of which have been almost entirely lost in San Francisco (Vasey

1996). Figure 18 shows the location of native plant communities in both Areas A and B.

Non-native plant communities are those that are predominantly composed of species that were deliberately or inadvertently introduced by humans during and post European settlement. A survey found 161 non-indigenous species representing 41 percent of the 389 plant species, many of which are highly invasive, within the Presidio's natural areas (Vasey 1996). Several trees and shrub species are native to other parts of California, but not native to the Presidio. Many species are garden "escapes." Most are invasive weedy species that constitute threats to indigenous habitat and native species. Where ice plant, ripgut brome, or soft chess have overwhelmed the native species, the community is categorized as "ice plant mats and non-native grasses on dunes" (Vasey 1996). On the Presidio, ice plant mats occur on sandy soils above Baker Beach, between Washington Boulevard and the PSH, and north of Lobos Creek. There are also areas dominated by Cape, English, and Algerian ivies.

Plant Communities Occurring only in Area A

Wetland Communities

In Area A, tidal action was introduced behind part of the foredune system on Crissy Field, restoring about 15 acres of tidal prism. Subsequent planting efforts, which reintroduced approximately 22 native plant species over the past few years, have resulted in the restoration of 3 acres of coastal salt marsh vegetation.

Upland Communities of Area A

The northern foredune community forms a transition along the coastline between the marine habitat of the Pacific Ocean and terrestrial habitats farther inland. The foredunes are composed of active sand dunes that have not been stabilized by vegetation, and are subject to movement of sand from wind and wave erosion. As dunes move inward, they become vegetated and more stable. On the Presidio, the foredune community covers a total of approximately 14.2 acres, occurring near the mouth of Lobos Creek, and extending north to the cliffs beyond the shoreline at Baker Beach and to the Crissy Field dunes.

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Remnants of the northern foredune community persist between the Crissy Field wetland and San Francisco Bay. It is dominated by beach sagewort, sand verbena, silver beach weed, coast buckwheat, Chamisso's lupine, beach primrose, American dune grass, and strawberry. Plants associated with this community are tolerant of desiccating, salt-bearing winds. Coastal dune systems on the San Francisco peninsula also support unique plant and insect communities (Vasey 1996; Hafernik 1994). The extent of the foredune community has been greatly reduced from its historic distribution and this community is now rare in California (CDFG n.d.).

Plant Communities Occurring in both Areas A and B

Wetland and Riparian Communities of Areas A and B

To date, 34 areas of fresh water wetland and riparian vegetation, totaling about 39 acres, have been identified in both Areas A and B (see Figure 19). Palustrine emergent wetlands (represented by freshwater marsh and freshwater seep communities, discussed below) are found in the vicinity of permanent seeps and pond margins. Palustrine shrub-scrub wetlands (represented by the central coast riparian scrub community) and palustrine forest communities (represented by arroyo willow riparian forest and coast live oak riparian forest) occur along the margins of creeks and Mountain Lake. In addition, 15 additional wetland-like areas, totaling 43.3 acres, have been identified (Wood 1999). Although these areas may not meet the criteria required for classification as jurisdictional wetlands, they provide important wetland habitat values for wildlife, such as seasonal water sources, cover, and food.

Coastal freshwater marsh – This is an herbaceous community occurring in areas with perennial inundation or soil saturation in the root zone. On the Presidio, it covers 1.8 acres dominated by emergent wetland plants such as tules or bulrushes, rushes, and sedges. Much emergent and aquatic vegetation grows along the edges of Mountain Lake in the South Hills Planning District.

The 18-acre Crissy Field wetland is one component of the larger Crissy Field Restoration Project, designed to restore approximately 100 acres of bayfront shoreline to enhance natural, cultural, and recreational values.

Construction of the wetland and adjacent foredune habitat was completed in November 1999. The wetland is designed to function as a tidal salt marsh. Over 35,000 native salt marsh and upland plants representing 25 species have been planted in the wetland.

Four plant communities occur on the restored site. The salt marsh community is dominated by cordgrass, pickleweed, salt grass, and marsh gumplant. The foredune community is comprised of sand verbena, beach sagewort, beach bur, beach strawberry, beach salt bush, morning glory, beach pea, and American dune grass. The backdune scrub community has been restored with plantings of shrubs including coyote brush, mock heather, lizard tail, buckwheat, beach primrose and sticky monkey flower. Dune gilia and San Francisco spineflower, special-status plant species indigenous to the Presidio, have been established in the backdune. About one-third of the restored wetland consists of a freshwater wetland, or dune swale that supports silverweed, water parsley, yellow and arroyo willows, dogwood, cow clover, and several species of rushes and sedges.

Freshwater seeps – These are composed of vegetation similar to that of a freshwater marsh, occur at sites with seasonal or perennial soil saturation resulting from groundwater seepage. On the Presidio, small seeps and springs occur in northern coastal scrub in Areas A and B and on permanently moist or wet soils found north of the PSHS tennis courts in the South Hills Planning District, and within the East Housing District. Although they cover little area, these small wetlands provide a rich species diversity (Vasey 1996). For example, the special-status Franciscan thistle occurs only in this community, and a small willow-wax myrtle grove and other seasonal wetland grassland species have established in the seasonal dune slack north of the PSHS. This evolving dune slack wetland vegetation is the only remnant example of its kind on the northern San Francisco peninsula.

Riparian communities – These are dominated by native plants, such as willows and alders, that are adapted to moist growing conditions along streams and other drainages. In general, riparian communities throughout California and especially in the San Francisco region are considered sensitive because of very high wildlife values, limited extent in this arid region, and substantial losses of extent and values resulting from historic and recent human activities and

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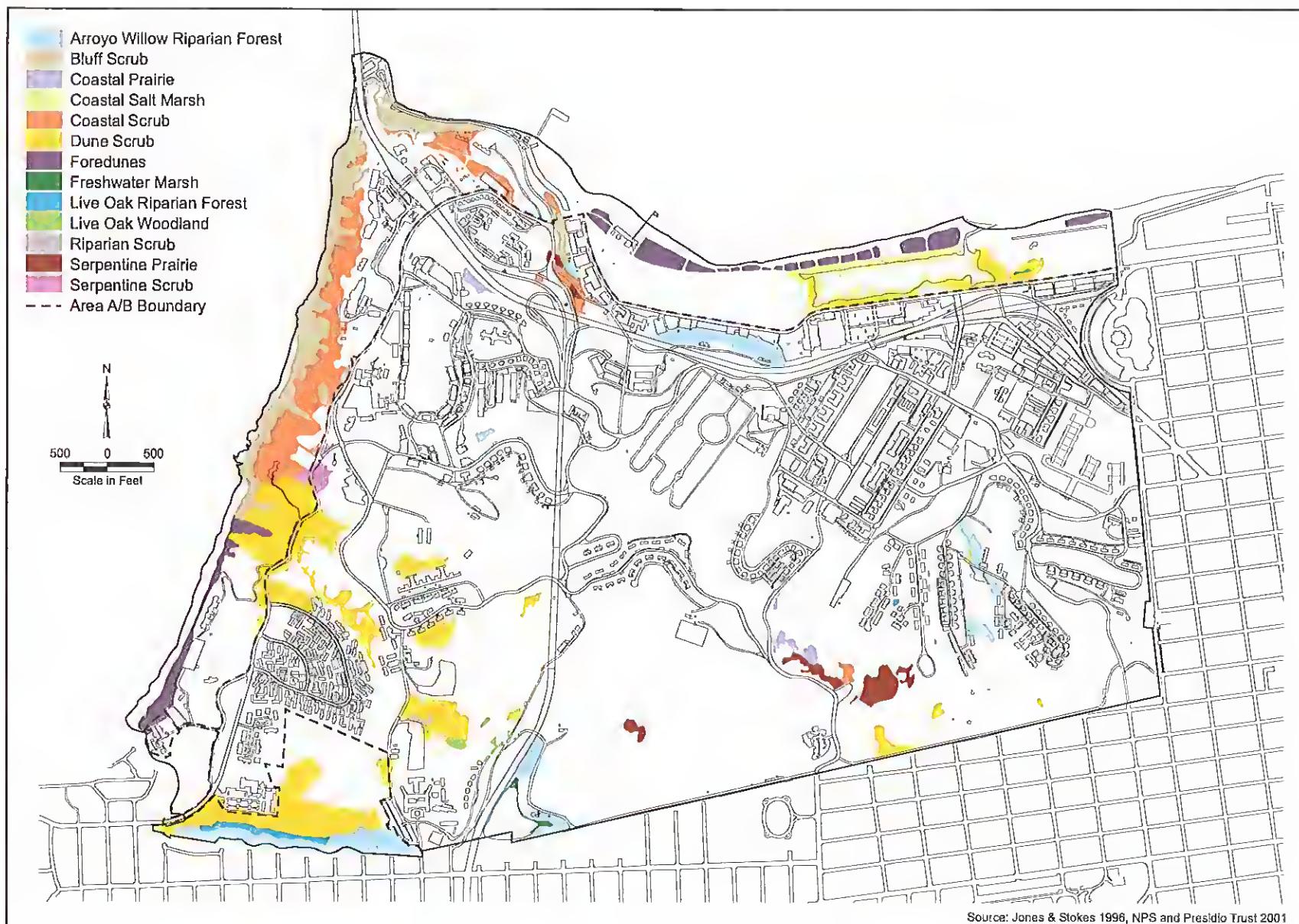


Figure 18: Native Plant Communities

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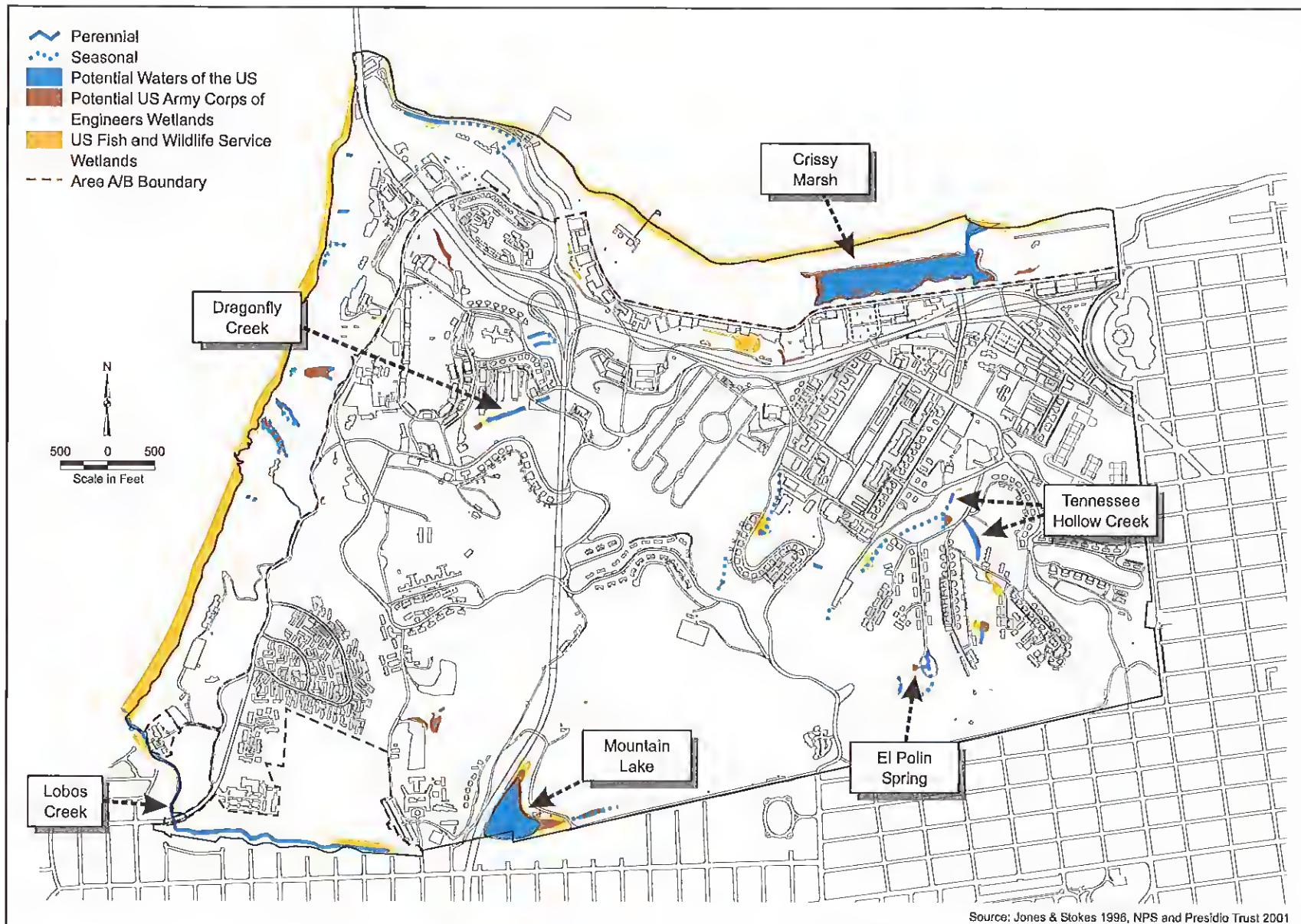


Figure 19: Wetlands and Stream Drainages

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development. Riparian communities provide shelter, nesting sites, forage and water for a wide variety of wildlife species, including migratory bird species.

In the Presidio, riparian vegetation is represented by three native plant communities (Figure 18), described below.

Central coast live oak riparian forest, - Covering 1.8 acres of the Presidio, is a hardwood forest dominated by coast live oak trees that occurs along drier, outer floodplains of perennial streams. This community generally occupies a transitional zone between moist, willow-dominated areas and drier, upland shrublands. The oak riparian forest adjacent to Lobos Creek in Area A is the last stand associated with a riparian area within the northern San Francisco Peninsula. Lobos Creek supports one of the least fragmented pieces of undeveloped riparian habitat in the city and one of the areas of highest wildlife habitat value in the Presidio (Harding Lawson Assocs. 1996). Its understory supports a diversity of plant species, but in some areas it is degraded by a dense cover of English and Cape ivies.

Central coast arroyo willow riparian forest, - Often occurring in pure dense stands of arroyo willow trees, these develop in the wettest zones of perennial and intermittent creeks and ponds below the zone where live oak riparian forest is established. Arroyo willow riparian forest occurs over 5.7 acres along the central reach of Lobos Creek and the northern margin of Mountain Lake, and in a few scattered locations along the El Polin Spring/Tennessee Hollow drainage in the East Housing Planning District. Arroyo willow riparian forest is relatively uncommon at the Presidio and in San Francisco, and is the richest existing indigenous native community on the Presidio (Vasey 1996).

Central coast riparian scrub – This is a dense stream- or lake-associated community with sandy soils and gravel bars dominated by large native shrubs including California blackberry and small trees, such as willows adapted to high moisture levels and frequent flooding. Central coast riparian scrub occurs on 0.4 acre in association with arroyo willow riparian forest at Mountain Lake and in a small section of the eastern tributary of the Tennessee Hollow Drainages System. An isolated stand of riparian scrub occurs east of Battery Caulfield Road, north of the PSHS. This stream- or

lake-associated community is dominated by shrubs and small trees including California wax myrtle, coyote brush, and arroyo willow.

Upland Communities of Areas A and B

Bluff scrub – In the Presidio this is relatively continuous along the steep bluffs facing the ocean from Battery Crosby to south of Fort Point, and along the bayshore from Fort Point to west of Crissy Field, covering a total of 22.1 acres on the Presidio. It is more fragmented on the bayshore side and on the more interior upland cliffsides. Bluff scrub also occurs on serpentine outcrops at Fort Point and north of Baker Beach. Bluff scrub is dominated by low shrubs and prostrate herbaceous species including California blackberry, poison oak, lizard tail, and toyon. The bluff scrub community has the highest concentration of native species and natural diversity on the Presidio (Vasey 1996).

Northern coastal scrub – This occurs at a slightly higher elevation on adjacent gentle slopes and inland areas. Coastal scrub extends inland of bluff scrub from Battery Crosby to west of Crissy Field, and at 3 scattered locations in the south central portion of the Presidio in the Main Post and residential Planning Districts. Much of the 43.6 acres mapped as coastal scrub occur on serpentine soils and could support inclusions of serpentine scrub. This community is dominated by California blackberry, poison oak, prostrate and erect coyote brush, golden yarrow, toyon, and arroyo willow.

Central dune scrub – This is an inland sand dune community of shrubs and annual and perennial wildflowers that is characterized by densely packed shrubs interspersed with scattered grassy openings. The largest remaining patches of dune scrub occur on the bluffs below Lincoln Boulevard south of Battery Crosby, between Lincoln Boulevard and Washington Boulevard, on the restored Lobos Creek dunes north of Lobos Creek, and on sites east of the PSHS north parking lot. The Lobos Creek dunes were a playing field and disturbed area that was restored in 1995. Dune scrub occurs on the sand terrace slopes above Baker Beach and extends up sandy inland dunes east toward and beyond Mountain Lake. Dune scrub occurs over a total of 48.5 acres in Area A and Area B within the South Hills Planning District and the East Housing Planning Districts. It is dominated by mock heather, lizard tail, bush monkeyflower, coyote brush, bush lupine, Chamisso's Lupine, poison oak, California coffeeberry, and California blackberry. Several special- status plant species (San Francisco campion, San

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Francisco wallflower, San Francisco spineflower, dune gilia, and San Francisco lessingia) are found in association with this community. The extent of the dune scrub community has been greatly reduced from its historic distribution, and it is considered to be a rare community in California.

Serpentine scrub (Chaparral) – This covers 3.5 acres on the Presidio and intergrades with serpentine grassland and serpentine barrens. Serpentine (a soil derived from serpentinite rock) contains low levels of nutrients, such as nitrogen, that are essential to plant growth, and high levels of minerals that are toxic to most plants, such as nickel. Many plant species, including several special-status species described below, are considered “serpentine endemics.” Small patches of serpentine scrub occur on well-developed serpentine soils southwest of Crissy Field in the Main Post Planning District, south of the World War II Memorial on either side of Lincoln Boulevard in Area A, and the South Hills Planning District. The indigenous serpentine natural communities on the Presidio are more diverse than natural communities occurring on sandy substrates, and support many rare plant species (Vasey 1996).

Coastal terrace prairie – This was once the most common plant community on the Presidio but now covers less than 3 acres in the western area of the Presidio (Vasey 1996). Coastal prairie is dominated by California oatgrass, purple needlegrass, foothill needlegrass, and many non-native grasses. Coastal prairie is considered to be a sensitive community because its extent has been drastically reduced in California due to agricultural practices and urban development. (CDFG n.d.)

Serpentine bunchgrass grassland (Prairie) – This is a sensitive grass- and herb-dominated community restricted to well-developed serpentine soils in more protected, drier, less windy, and more sunny uplands. On the Presidio, the serpentine bunchgrass community occurs on about 4 acres within the South Hills Planning District. The upper portions of the rocky serpentine ridge running south from Fort Point to the southern Presidio entrance at Arguello Boulevard once contained large areas of serpentine bunchgrass prairie (Vasey 1996). It is dominated by purple needlegrass and

foothill needlegrass as well as serpentine-endemic special-status species such as the Presidio clarkia and Marin western flax.

Coast live oak woodland – This develops in moist, sheltered sites away from the immediate coast. A total of 5.3 acres of live oak woodland occur on the Presidio. Only small, scattered stands of coast live oaks with an understory of shrubs or grass occur on the Presidio. A stand of short, multitrunked coast live oaks occurs on about 1.7 acres of stabilized dunes northeast of the PHSH in the South Hills Planning District. Historically, other native trees (such as buckeye, madrone, or California bay) could have occurred with coast live oak.

Special-Status Plant Species

Special-status species of plants are those legally protected under FESA, species proposed or candidates for listing under FESA, and “sensitive” species that are considered sufficiently rare by the scientific community to qualify for such listing. As a federal agency, in accordance with Section 7 of the FESA, the Trust is required to consult as necessary with the USFWS to ensure that its actions do not jeopardize the continued existence of species listed as endangered or threatened under FESA or their designated Critical Habitats. Section 7 consultations with the USFWS was initiated during the scoping phase for the PTMP, and will continue to ensure that the plan is in compliance with federal law and will not jeopardize the continued existence of any special-status species nor its habitat.

Thirteen endangered, threatened, and sensitive plant species listed, proposed, or candidates for listing under FESA, Species of Special Concern designated by the USFWS, and species considered sensitive by the California Native Plant Society (CNPS) known to occur on the Presidio are designated in Table 4 and shown on Figure 20 (USFWS 2001). Four plant species listed as endangered under FESA occur on the Presidio: Raven's (Presidio) manzanita, Presidio clarkia, California sea-blite and San Francisco lessingia. One species, Marin dwarf flax, is listed as threatened under the FESA. Two species, Franciscan thistle and dune gilia, are proposed for listing under FESA. Six other plant species are considered Species of Special Concern by the USFWS. Coast rockcress is included on CNPS List 4, a watch list of plants that are declining in numbers in California. Five of these plant species are also listed as endangered, and one is listed as threatened by the State of California. The State of California's Endangered Species Act

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(CESA) protects endangered species, although state law is not applicable to federal lands.

The Raven's Manzanita Recovery Plan was published by the USFWS in 1984. The focus of the recovery effort for this federally-listed endangered species is protection of the existing wild manzanita plant and identification of new receptor sites for establishment of daughter clones. An update to the management objectives for the Raven's manzanita is expected later this year, as described below.

Recovery plans for two federally-listed plant species occurring on the Presidio are also contained in the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS 1999). The plan addresses the recovery of the Presidio clarkia and the Marin dwarf flax. It outlines protection and management strategies and actions for the remaining populations to ensure the long-term survival of the species. Strategies include preserving the largest possible block of serpentine habitat, establishing protective buffer areas, reducing trampling and disturbance, and allowing for potential expansion of the population. In addition, unoccupied suitable habitat would be protected, and the effectiveness of various techniques for opening new habitat would be evaluated. Although not discussed in the Recovery Plan, these measures would also benefit the Franciscan thistle, San Francisco wallflower, and the coast rock cress.

In addition, the USFWS is preparing a Draft Recovery Plan for Coastal Plans of the Northern San Francisco Peninsula. The recovery plan will address two species: San Francisco lessingia (*Lessingia germanorum* Cham.) and Raven's manzanita (recently treated taxonomically as *Arctostaphylos hookeri* G. Don ssp. *ravenii* P. Wells). The recovery plan is expected to be released in Fall 2001. Once approved, this recovery plan will provide an update for and merge with the 1984 Raven's manzanita plan described above. The plan will include actions that would benefit other federally-listed species that are ecologically associated with these principal species.

Special-status species within the native plant communities on the Presidio are concentrated in central dune scrub, serpentine scrub, and serpentine grassland communities, discussed in the previous text on plant communities

(Table 4 and Figure 18). The rapid spread of invasive exotic plant species is one of the most critical threats to the function of these communities and the viability of the Presidio's native flora (Vasey 1996).

California Sea-blite – This was recently reintroduced into the Crissy Field marsh by the GGNRA. It is a wind-pollinated, succulent-leaved, perennial shrub in the goosefoot family. The historic range of this species was limited to the San Francisco estuary and the vicinity of Morro Bay. California sea-blite had been extirpated from San Francisco Bay; there have been no valid reports or collections of this species from the Bay since the mid-twentieth century. Prior to its reintroduction, Morro Bay hosted the only surviving population, where it is restricted to the upper-intertidal zone within coastal salt marsh habitat.

Coast rock cress – This is a perennial plant with rose-purple flowers borne on a stalk arising from a basal rosette of leaves. It occurs in scattered locations in bluff scrub and coastal scrub communities. In the Year 2000 survey, 3 formerly located populations were not found. However, 2 new populations were mapped on the coastal bluffs.

Dune gilia – This is an annual plant with a skunk-like odor and bright blue-violet flowers. It occurs in open sandy areas within the central dune scrub plant community habitats.

Franciscan thistle – This is endemic to the San Francisco Bay region. It is a short-lived, perennial plant found in serpentine seeps, streamsides, slope wetlands and coastal sites where the soil is saturated perennially, or nearly so. On the Presidio, 1 population of the Franciscan thistle occurs along the coastal bluff at Fort Point, and several populations occur along the serpentine seeps of the coastal bluffs immediately south of the Golden Gate Bridge in Area A.

Marin dwarf flax – This is a small annual with pink to rose-colored petals. One population occurs on serpentine barrens in serpentine scrub and grassland

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Table 4: Known Occurrences of Special-Status Plant Species on the Presidio

Common Name	Scientific Name	Federal/State/ CNPS Status	Habitat	Area
Coast rock cress	<i>Arabis blepharophylla</i>	--/4	Coastal Scrub, Serpentine Scrub	A
Raven's manzanita	<i>Arctostaphylos hookeri</i> ssp. <i>ravenii</i>	FE/CE/1B	Serpentine Scrub	A,B
San Francisco Bay spineflower	<i>Chorizanthe cuspidata</i> var. <i>Cuspidata</i>	(FSC)--/1B	Lobos Creek Dunes, Dune Scrub	A,B
Franciscan thistle	<i>Cirsium andrewsii</i>	--/proposed 1B	Coastal Bluff Serpentine Seeps	A
Presidio clarkia	<i>Clarkia franciscana</i>	FE/CE/1B	Serpentine Coastal Prairie, Serpentine Barrens and Rock Outcrops	B
San Francisco wallflower	<i>Erysimum franciscanum</i>	(FSC)--/4	Dune Scrub, Coastal and Bluff Scrub, Serpentine Grassland	A,B
Dune gilia	<i>Gilia capitata</i> ssp. <i>chemissoanis</i>	--/proposed 1B	Dune Scrub, Coastal Scrub	A,B
San Francisco gumplant	<i>Grindelia hirsutula</i> var. <i>maritima</i>	(FSC)--/1B	Serpentine Scrub	A,B
Marin western flax	<i>Hesperolinon congestum</i>	FT/CT/1B	Serpentine Grassland and Barrens	B
San Francisco lessingia	<i>Lessingia gennanorum</i>	FE/CE/1B	Lobos Creek Dunes, Dune Scrub	A,B
San Francisco popcorn flower (a)	<i>Plagiobothrys diffusus</i> (<i>P. reticulatus</i> var. <i>rossianorum</i>)	(FSC)/CE/1B	see footnote a.	
San Francisco campion	<i>Silene verecunda</i> ssp. <i>verecunda</i>	(FSC)--/1B	Dune Scrub	A,B
California seablite	<i>Suaeda californica</i>	(FE/CE/1B)	Brackish marsh	A
San Francisco owl's-clover	<i>Triphysaria floribunda</i>	(FSC)--/1B	Serpentine Scrub	B

Source: California Department of Fish and Game Natural Diversity Database Special Vascular Plants, Bryophytes and List, January 2001 and National Park Service (1995b).

Notes:

Status definitions:

--	=	no listing status
Federal:	U.S. Fish and Wildlife Service (50 CFR 17.12, 61 FR 40:7596-7613, Feb. 28, 1996)	
FE	=	listed as endangered under the Federal Endangered Species Act
FT	=	listed as threatened under the Federal Endangered Species Act
(FSC)	=	Federal Special Concern Species (former Category 2 candidates)
State:	California Department of Fish and Game (1995)	
CE	=	listed as endangered under the California Endangered Species Act
CT	=	listed as threatened under the California Endangered Species Act
CNPS:	California Native Plant Society (Skinner and Pavlik 1994)	
1B	=	List 1B species: rare, threatened, or endangered in California and elsewhere
4	=	List 4 species: a "watch-list" of plants of limited distribution

(a) Last known occurrence at the Presidio (1933), not included on Figure 20.

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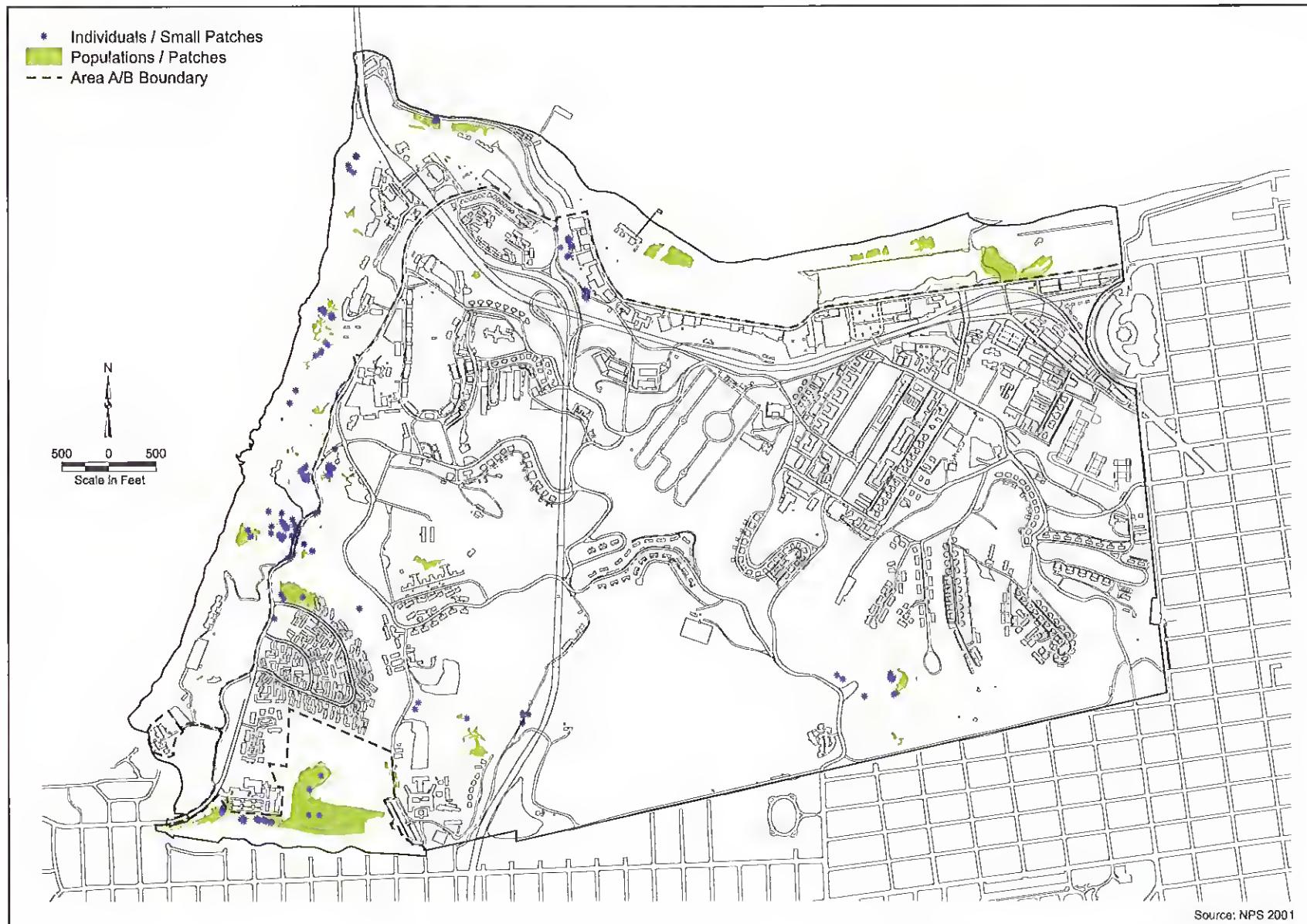


Figure 20: Special Status Plants

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habitats in Area A. A population was recently extirpated (last seen in the early 1990s) from Inspiration Point in the South Hills Planning District.

Presidio clarkia – This is an annual with lavender-pink petals shading to white near the middle and a bright reddish-purple base. It is endemic to serpentine coastal prairie and serpentine rock outcrops. Only 3 populations are known, 1 located in the Oakland Hills in the East Bay, and 2 on the Presidio. Of the 2 Presidio populations, only the Inspiration Point population in the South Hills Planning District is a natural historic population; the second population at the World War II Memorial was established by direct seeding in the 1970s. Habitat for the Presidio clarkia is affected by the establishment of non-native vegetation, resulting in increased competition for water and light and a build-up of organic material, and creating low-light and high-nutrient conditions less favorable for the clarkia (Bode 2000).

Raven's manzanita – This is a mat-like, perennial shrub, with prostrate stems. It is endemic to the Presidio. The only known single natural surviving individual of Raven's manzanita was rediscovered by Peter Raven in the early 1950s, and is estimated to be well over 60 years old. It occurs on a small portion of a 0.6-acre serpentine outcrop in the general vicinity of the World War II Memorial in Area B (USFWS 1984). Clones from this plant have been introduced in several places in the adjacent area and across Lincoln Boulevard in Area B (although the parent plant is in Area B, clones were planted in both areas). Habitat for this species is degraded by trampling, by social trail development, and invasion by exotic plants, especially Cape ivy and iceplant (GGNRA 1994). In addition, predation by a recent invasion of tussock moth larvae and an infectious fungus have partially to fully defoliated some plants, and could be responsible for the dieback of some clones. The current focus of the recovery effort for the species is protection of existing manzanita plants and identification of new receptor sites for transplants. The 1984 USFWS Raven's Manzanita Recovery Plan is currently being updated, and will include the publication of additional management objectives and recovery actions (Baye 2000).

San Francisco campion – This is a perennial with white to rose flowers. It occurs in dune scrub habitat. Two populations are known to occur in the

South Hills Planning District, and 1 population in Area A at North Baker Beach.

San Francisco gumplant – This is a perennial with gray-green leaves and yellow flowers borne in a head. It occurs in serpentine scrub in the Fort Scott Planning District and on serpentine soils in bluff and coastal scrub communities.

San Francisco lessingia – This is an annual with deep lemon-yellow flowers borne in a terminal head. It is endemic to the northern San Francisco peninsula from San Mateo County north to the Presidio. It was formerly widespread regionally throughout open sandy habitats. Today, 6 of its 7 remaining sites supporting small populations of lessingia are within the Presidio. One of these sites near Battery Caulfield was reintroduced in the 1980s by the U.S. Army. Lessingia occurs naturally in early central dune scrub habitat on remnant and re-created dunes in the Lobos Valley and at Crissy Field. In Area B, lessingia is found at Rob Hill in the South Hills Planning District along the Presidio Hills Golf Course Road cut in the South Hills Planning District, and north of the PSHS. Lessingia thrives within areas of small-scale natural disturbances and gaps, and is interspersed within the larger dune vegetation community itself. On the Presidio, it occurs only on coastal sand in small-scale blowouts or land slippages, eroding areas, or habitat disturbed by the removal of invasive exotic plant species. The populations are found on stable, mature, partly lithified dunes, such as those occurring on the Oceanview and Colma formations north and south of the mobile dune sheet, at the tip of Baker Beach. The entire northern San Francisco recovery area for this species is located within the Presidio, because San Francisco lessingia requires specific aspect (exposure to wind), elevation, slope, and soil conditions that are geographically specific, and cannot be duplicated elsewhere (personal communication Baye).

San Francisco owl's clover – This is a short annual with small creamy white flowers borne in a dense spike. It is a Central Coast endemic that was once widespread on the San Francisco peninsula, but is now restricted to 2 populations occurring on serpentine scrub in the South Hills Planning District, and serpentine-derived soils north of the Log Cabin in the Fort Scott Planning District. The Fort Scott population of approximately 500 individuals was found in April 2001.

San Francisco spineflower – This is an annual with decumbent, soft-hairy stems and hairy, white-to-rose flowers with a central tooth on the petal. It occurs in

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sandy openings in dune scrub. On the Presidio, populations are known to occur at the Crissy Field dunes and swales, Battery Caulfield, North Baker Beach, Baker Dunes and the Lobos Creek dunes in Area A, and the Presidio Hills Golf Course and Rob Hill in the South Hills Planning District.

San Francisco wallflower – This is a biennial to subshrub with cream-colored to yellow flowers. It occurs in foredune, dune scrub, bluff scrub, and coastal scrub communities in both Areas A and B.

Exotic Plant Species

Exotic species are non-native species that were deliberately or indirectly introduced as the result of human activities. All remnant natural communities on the Presidio are vulnerable to invasion by exotic species. Non-native plant species can alter the biological diversity of native communities by outcompeting and displacing native vegetation, changing natural successional patterns, and altering soil composition. Introduced trees have affected the Presidio's microclimates by limiting natural processes, such as wind movement, by acting as windbreaks, collecting moisture from summer fog, increasing shade, and altering soil conditions. Because fire has been suppressed on the Presidio, fire-intolerant non-native species are increasing. Additionally, non-native plants do not usually provide optimum forage for native wildlife because they did not evolve together.

In 1883, the U.S. Army initiated a tree-planting program to establish a forest on the Presidio. The survivors of these plantings are primarily blue gum eucalyptus, Monterey cypress, Monterey pine, and acacias (Vasey 1996).

Following disturbance to foredune and dune scrub communities, non-native species, such as ice plant, exotic annual grasses, and forbs, have become dominant species at many sites, often approaching 100 percent cover. Ice plant was planted by the U.S. Army in many of these areas to provide cover and to stabilize soils to correct erosive conditions resulting from over-grazing and disturbance. The most invasive exotic plant species currently affecting remnant native habitat include European annual grasses, such as tall fescue, orchard, purple velvet and erhartia grasses; Cape,

English, and Algerian ivies; oxalis; iceplant and narrow-leaved iceplant; pampas grass; French broom; acacias; prickly ox-tongue; sow thistle; and Italian thistle.

Ecological Restoration and Habitat Enhancement

The goal for ecological restoration efforts is to restore both natural processes and function. The VMP identifies sites proposed for native species and native habitat restoration. Most of these sites are adjacent to existing native plant communities, located on sandy and serpentine soils, which support a number of special-status plant species, or are riparian or aquatic habitats that have high value to wildlife. Following the identified actions in the VMP could expand the current native ecosystems of the Presidio from almost 170 acres to 394 acres, an increase of approximately 220 acres.

Ecological restoration activities consistent with the goals and objectives of the VMP are occurring on approximately 210 acres of the Presidio, including Lobos Creek Dunes, North Baker Beach, the PHSF Planning District, Rob Hill, Inspiration Point, and the Crissy Field Marsh (see Figure 21). These natural resource stewardship efforts are supported and accomplished by shared resources between the NPS, the Trust, and the Golden Gate National Parks Association through integrating community participation and educational opportunities into all phases of restoration. Some of these habitat restoration activities include removal of non-native vegetation, native plant propagation, revegetation, and monitoring.

Additional areas proposed for restoration under the VMP include existing dune, bluff, coastal scrub, and grassland areas; the Mountain Lake and Lobos Creek drainage areas; the three tributaries and associated riparian corridor of the Tennessee Hollow creek; serpentine grassland and scrub communities; areas suitable for rare plant species in dune and riparian areas; and areas where remnant native plant communities and wetland areas can be enhanced or enlarged. To preserve the unique genetics of the Presidio flora, all plant material will be derived from populations of native species presently or historically occurring on the Presidio. All ecological restoration sites will be monitored until the established success criteria are met.

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Figure 21: Habitat Restoration Sites

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Vegetation management actions identified in the VMP include:

- removing threats to native species, repairing damage to habitat, and increasing reproductive success;
- the restoration and enlargement of native plant communities by reclaiming habitat from past development, non-native species, and non-native trees outside of the historic forest management zone;
- the preservation and enhancement of rare plant species habitats by evaluating species-specific habitat needs, and giving high priority to actions that preserve and enhance those habitats; and
- protection and enhancement of wildlife habitat by expanding habitat for native plants, increasing native species and habitat diversity, avoiding disturbance to non-native forests with high-wildlife value, and avoiding disturbance to wildlife habitat during critical times of the year (e.g., nesting bird season).

Under the VMP, threats to all biological resources will be removed or mitigated to the greatest extent feasible. Habitat fragmentation and loss of biological diversity often result from the invasion of non-native plants into native plant communities. To address the control of invasive non-native plants the Trust will follow the objectives in the VMP including preventing introduction of non-native species, and controlling and removing existing non-native species. Exceptionally invasive plants, such as Andean pampas grass, Australian fireweed, Bermuda buttercup, French broom, Cape ivy, gorse, European dune grass, and sow thistle, have the highest priority for eradication, and will be controlled or removed wherever they are found on the Presidio. Iceplant, albizia, wattles (acacia), velvet grass, orchard grass, bentgrass, European annual grasses, prickly ox-tongue, and myoporum will also be actively managed as they particularly threaten serpentine communities. Control activities will be limited in areas where the non-native plant material is considered important to the preservation of the historical integrity of cultural resources.

Restoration actions will be planned and evaluated on a site-specific basis by a multidisciplinary team so that impacts on sensitive resources can be minimized. All restoration and Trust operational activities will use current best-management practices to provide the highest level of protection for

both physical and biological resources. All restoration planning will be coordinated with the future area planning efforts.

In addition, ecological restoration activities will focus on the recovery of federally listed species. The 13 special-status plant species described in Table 4 will be protected and their populations will be monitored. Actions to recover the species and restore their associated habitats identified in USFWS Recovery Plans will be undertaken in coordination with the USFWS to ensure that actions comply with the FESA.

Integrated Pest Management

On the Presidio, Integrated Pest Management (IPM) practices developed by the University of California Statewide Integrated Pest Management Project are followed to control exotic pest plants, outbreaks of damaging insects, and plant pathogens. IPM develops and promotes the use of integrated, ecologically-sound pest management programs in California. IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Approved pesticides are used only after there is indication that they are needed, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment (UC Davis n.d.).

IPM practices for general pests have been developed, and plans for the Golf Course are almost complete. An integrated program emphasizing nonchemical methods will be used to control exotic plants and encourage the establishment and growth of native plants. Non-native species with the potential to threaten native species and ecosystems, and that can be successfully controlled, will also be managed and eradicated where possible. Animal pests to facilities and human health will also be controlled using IPM practices. Non-native wildlife pests will be controlled in order to conserve rare species, preserve historical integrity of cultural resources, conserve facilities in developed areas, or manage a human health hazard.

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WILDLIFE

Compared to vegetation and wetlands resources, only limited wildlife studies have been completed on the Presidio and more information is needed. Despite its isolation from large corridors of natural habitats, the Presidio is a valuable refuge, providing habitat for amphibians, reptiles, invertebrates, birds, and mammals. Although species diversity is often low for much of the wildlife, the diversity and richness of bird species is remarkably high for such a small acreage of habitat. Many of the areas, both natural and landscaped, provide important habitat structure for birds. The native scrub habitat, open spaces, riparian woodlands, available water, and cultural forest provide a variety of important habitat values.

In Area A, Crissy Field Marsh provides important aquatic habitat open to San Francisco Bay. Invertebrate species, such as crabs and aquatic insects that colonize the marsh, provide significant foraging opportunities for wildlife, especially shorebirds. These wildlife values will be affected by stormwater changes, outfalls, and noise and light pollution conditions. Bay and ocean dwelling special-status wildlife species that could be affected by spills of toxic materials, pollutants discharged through storm drains, or sediment resulting from erosion, include fish, such as steelhead and salmon, as well as the river lamprey, Pacific lamprey, and green sturgeon. Vegetation, microorganisms, and filter-feeding invertebrates occurring in the Crissy Field Marsh remove some sediment and pollutants from waters discharged into the marsh before they enter the ocean or bay; however, such discharges should be addressed and mitigated prior to reaching the marsh habitat.

Threats also affect the diverse wildlife within Area B of the Presidio. Habitat fragmentation and the isolation of open space by urban interfaces are inherent characteristics of Presidio. As fragmentation and isolation of wildlife habitat continues throughout the larger Bay Area, the importance of the Presidio's open space areas as a refuge increases. The Presidio's native wildlife resources could also be affected by non-native species such as Norway rats, bullfrogs, carp, spotted bass, feral cats, European starlings, pigeons, and red foxes. Native problem species include unnaturally elevated populations of skunks, raccoons, corvids, and the brown-headed

cowbird, which parasitizes open-cup nests of neotropical-migratory birds. Disturbances to wildlife and/or their habitats can result from park operations, visitors and their pets, off-trail bikes, dogs, hikers, special events, excessive lighting and noise, vehicle hits, tree and scrub removals, unpermitted collections, wildland fire suppression, erosion, construction, and environmental contaminants.

Applicable Laws and Regulations

The Federal Endangered Species Act of 1973, as previously described under the Vegetation section, would also be applicable for certain wildlife species known to, or with the potential to occur, at the Presidio.

In addition to FESA, the Migratory Bird Treaty Act of 1918 makes it unlawful to "take" (e.g., kill, harm, harass) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others.

The Migratory Bird Executive Order of January 11, 2001 directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act, and defines the responsibilities of each federal agency taking actions that have, or are likely to make, a measurable affect on migratory bird populations. All project actions within the Presidio must comply with this act; therefore, they cannot result in unauthorized take of migratory birds.

Wildlife History

Since the late 1800s, at least 262 vertebrate species have been recorded at the Presidio: 8 amphibians, 15 reptiles, 224 birds, and 14 mammals (Presidio of San Francisco 1997). These wildlife species are consistent with what is known about wildlife habitat relations in the communities present today. Other species, such as deer, could have occurred, but are no longer present on the Presidio. Historical land management practices on the Presidio displaced, altered, and reduced approximately 90 percent of the native vegetation, and have resulted in an associated loss of native plant species and diversity and diminished wildlife habitat. Extensive areas of native habitat were altered by the introduced forest stands or removed for development. Nonetheless, the Presidio provides

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important remnant wildlife habitat within the urban environment of San Francisco, where wildlife and wildlife habitat are scarce, and serves as an important link to coastal forests to the north and south. Wildlife corridors and bird locations are shown in Figures 17 and 22. Current forest areas and tree resources are shown on Figure 23.

Wildlife-Habitat Relationships

Mountain Lake supports a range of native-resident bird species, such as ducks, gulls, and grebes, as well as spring and fall migrants. Exotic species of fish, such as carp and spotted bass, as well as non-native bullfrogs and turtles, are the only fish, amphibians, and reptiles that occur in the Lake. These exotic species have successfully outcompeted the local aquatic fauna, such as the California red-legged frog and western pond turtle, that historically occurred in the Lake. Surrounding woodland provides habitat for red-shouldered hawks and willow flycatchers (special-status bird species).

The diverse community types occurring in the vicinity of Lobos Creek provide a range of habitats that support a number of aquatic and terrestrial wildlife species. Dune community plants provide habitat for birds and reptiles, as well as breeding and foraging sites, nectar sources, and host plants for insects, including butterflies and bees. Riparian scrub provides valuable habitat for wildlife. On the Presidio, riparian scrub occurs along Lobos Creek and in a small 0.5-acre patch at a sandy seep (spring) north of the PSHS tennis court. The diversity of species in riparian habitat is highly dependent on structural characteristics and extent of habitat. Remnant patches of riparian vegetation, although isolated and small in size, provide resting sites for migratory birds and limited habitat for resident species of birds, such as warblers. Such vestiges of riparian vegetation exist in Tennessee Hollow and at Dragonfly Creek as well as at the PSHS, Mountain Lake, and Lobos Creek. A population of California quail is established in dense willow cover adjacent to a seep-fed seasonal wetland located north of the PSHS. Native shrubs, such as toyon and coyote brush, provide structural diversity and increased habitat value wherever they occur. Replacement of native habitat by lawns and landscaping, the spread of invasive exotic animals and plants, predation by domestic cats and dogs,

and trampling and digging by dogs have altered wildlife communities occurring in the Presidio significantly by affecting ecosystem function, reducing vascular plant species richness, reducing insect abundance in certain plant communities, and reducing habitat for indigenous wildlife. Playfields, lawns, non-native plantings, and invasive plants provide little habitat value for wildlife other than generalist, opportunistic species, such as jays, blackbirds, starlings, house sparrows, raccoons, opossums, gophers, and small rodents. The populations of several of these opportunistic species have increased significantly due to human influences (primarily increased refuse) on the Presidio. Tall eucalyptus, pines, and cypresses provide nesting sites for raptors, although suitable undisturbed open grassland habitat and riparian forest foraging habitat for raptors is limited on the Presidio. These tree species also provide valuable habitat for woodpeckers, owls, flycatchers, and other songbirds. Exotic wildlife species, including the red fox and fish and bullfrogs at Mountain Lake, have a negative affect by preying on indigenous wildlife and reducing their populations.

Wildlife Resources Within the Presidio

Despite its isolation from undeveloped natural habitats, the Presidio is a valuable refuge-providing habitat for a variety of amphibians, reptiles, birds, and mammals, although species diversity is often low. The Trust will reduce threats to existing native wildlife populations and restore extirpated native animal species whenever feasible.

Birds

For many years, members of the Golden Gate Audubon Society have conducted informal year-round surveys of birds occurring on the Presidio. More than 200 species of birds are known to use the Presidio, as many as 50 of these for nesting. Because the Presidio is located along the Pacific Flyway, a route heavily used by spring and fall migrants, vegetated areas on the Presidio provide valuable resting places, as well as food and water sources for migrating birds. Figure 22 shows locations of sensitive birds in both Areas A and B. Figure 17 shows corridors used by wildlife.

Year-round resident and migrant birds account for the greatest number of wildlife species observed on the Presidio. The dunes provide foraging opportunities and nesting sites for shorebirds such as snowy plover and black

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oystercatcher. The mixed evergreen forest provides shelter and nest sites for a variety of birds, including great-horned owl, red-shouldered hawk, hairy woodpecker, purple finch, red crossbill, Steller's jay, American goldfinch, lesser goldfinch, Say's phoebe, olive-sided flycatcher, and Pacific-slope flycatcher. Of particular importance is the use of the Presidio native and non-native forests by neotropical migrants, for which the Presidio is an island of suitable habitat bounded by water on three sides, and by urban development on the south. Species that use these forests include the orange-crowned warbler, common yellowthroat, Wilson's warbler, Bewick's wren, and Swainson's thrush. The Presidio's tree and shrub dominated communities also provide essential habitat for wintering birds and for locally declining resident bird species that have been extirpated elsewhere in San Francisco, such as the California quail, western screech owl, wrentit, and Hutton's vireo. Furthermore, because urban development in the Bay Area has resulted in removal of many old trees, dead and decadent conifers in the Presidio's historic forest provide important habitat for cavity-nesting birds such as the barn owl, chestnut-backed chickadee, red-breasted nuthatch and pygmy nuthatch. Other bird species that could use habitats on the Presidio include pied-billed grebe, Virginia rail, sora, red-tailed hawk, American kestrel, band-tailed pigeon, tree swallow, violet-green swallow, cliff swallow, barn swallow, spotted towhee, and hooded oriole. For a description of special-status birds that are found on and within the vicinity of the Presidio, please see below.

Mammals

The mixed evergreen forest within the Presidio provides shelter and den sites for a variety of medium to small mammals. The riparian forest provides cover and breeding sites for opossums, skunks, and raccoons, which may forage in dunes or grassland (Harris 1993).

The most prevalent and diverse group of mammals within the Presidio appear to be bats. Ultrasound monitoring conducted on the Presidio from January to December 1994 indicated that 6 bat species known from pre-existing records for San Francisco County—red bat (*Lasiurus blossevillii*), hoary bat (*Lasionycteris noctivagans*), California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), Mexican free-tailed bat (*Tadarida brasiliensis*), and the big brown bat (*Eptesicus fuscus*)—forage in the Presidio. Mountain Lake had the highest level of bat activity and was the primary foraging area for the Mexican free-tailed bat, the most abundant bat species on the Presidio, accounting for 70 to 90 percent of all identified acoustic events. At Polin Spring and Hicks Athletic Field, the forest edge, at the interface between multi-aged forest stands and open areas had the greatest diversity of bat species.

Typically, bat activity is at a peak in mid-summer. The Presidio however, has extremely low levels of bat activity in summer suggesting that none of the species detected maintains breeding populations there. Greater levels of bat activity in the Presidio in fall-winter-spring could be due to a large increase in the population of Mexican free-tailed bats, which have large summer breeding colonies in hotter inland areas, and then migrate to the margins of San Francisco Bay where moderate temperatures allow winter foraging. The Presidio is important fall-winter-spring habitat for the Mexican free-tailed bat and hoary bat. Observations suggest that the Presidio is located on a migratory flyway for the red bat and hoary bat (Pierson 1995).

For a discussion of special-status mammals that could occur on or within the vicinity of the Presidio, please see below.

Amphibians and Reptiles

There have been few studies to document the amphibians and reptiles occurring on the Presidio. Although 8 amphibians and 15 reptiles have been reported since the 1800s (Jones & Stokes 1997), additional inventory and monitoring, and further field studies are lacking, as there is no wildlife specialist at the Presidio. However, a few area-specific surveys have occurred, including at Mountain Lake, which supports only non-native reptiles and amphibians. Although museum specimens of the native California red-legged frog and western pond turtle have been collected at Mountain Lake, these native species have been replaced through habitat modifications and exotic species competition. The non-native red-eared slider and other non-native turtles have replaced the western pond turtle, and the bullfrog has replaced native tree frogs and red-legged frog. The bullfrog, together with the non-native fish in Mountain

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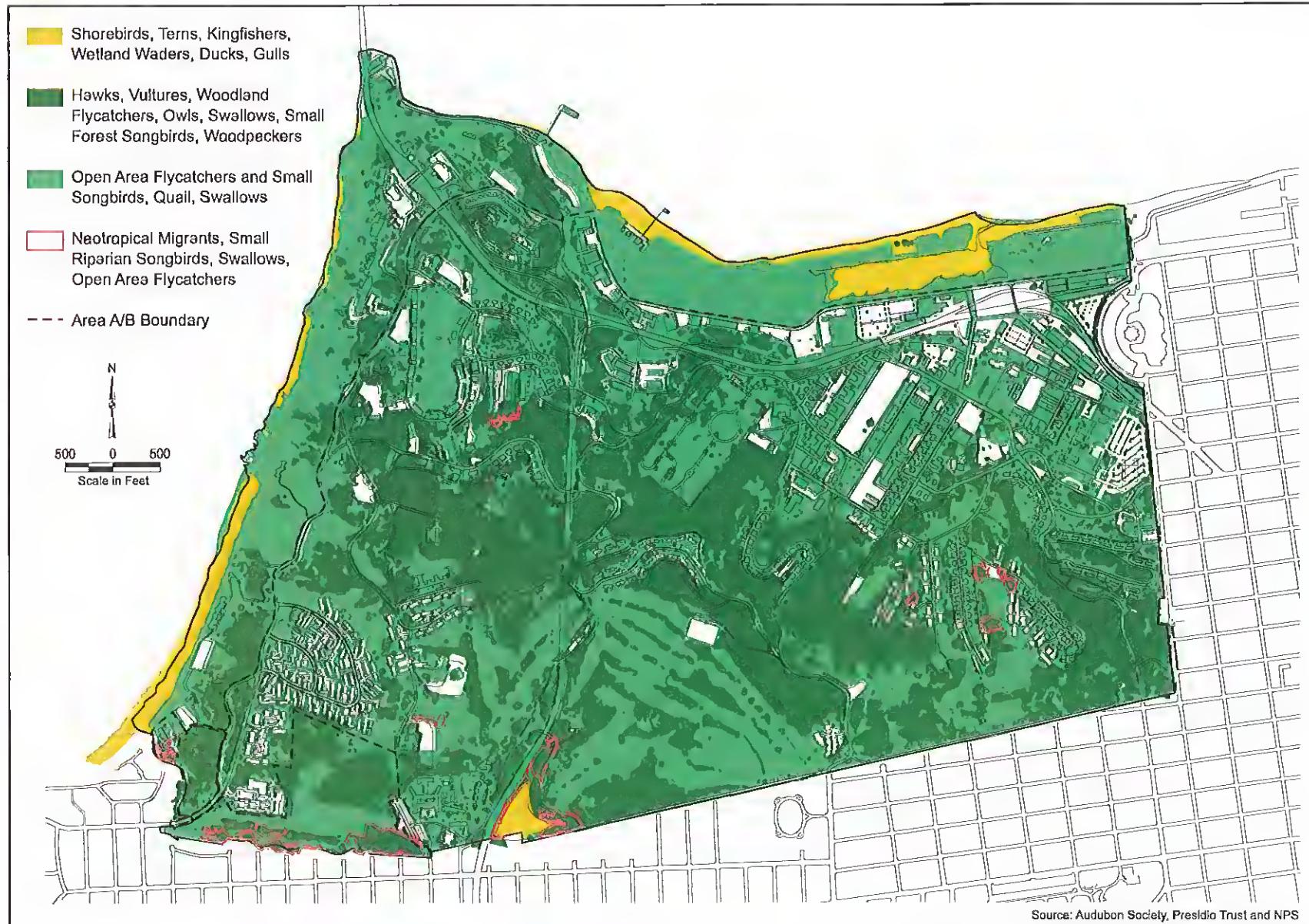


Figure 22: Common Bird Locations

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Figure 23: Current Forest/Tree Resources

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Lake, are strong predators of other amphibians that otherwise could live there. The Mountain Lake Enhancement project does not specifically address how to approach this problem; however, it does support research on control methods. A survey of the Baker Beach area in the late 1890s (Howell, unpublished) documented the presence of an unknown snake, most likely the coast garter snake, and the western fence lizard. Other native species commonly observed on the Presidio are California slender salamanders, western fence lizards, and alligator lizards. Salamanders are often seen in the Presidio, and recently Pacific tree frogs have been observed in the Fort Scott Planning District.

Aquatic Animals

Aquatic resource data have been gathered at Lobos Creek for several purposes. The University of San Francisco has collected field data at Lobos Creek as part of an environmental monitoring class, as well as for a thesis project. Taxa common in slow-moving water (e.g., *Argia* sp., amphipods) were the major components of the benthic macroinvertebrate collected (Codemo et al. 1995). Fish consist of 1 species: threespine stickleback (*Gasterosteus aculeatus*). Other than flow considerations, existing habitat conditions are good for threespine stickleback. These fish are closely associated with emergent vegetation and slow water, which are characteristic of much of Lobos Creek. Minimum fish densities at four sites sampled in 1998 ranged from 22 to 560 fish per 100 m³. Major fish passage barriers are present at several locations along Lobos Creek, and preclude movement of fish between the creek and the Pacific Ocean. Fish known to occur in Area B are found at Mountain Lake. These non-native fish include carp, mosquito fish, and spotted bass. No native fish have been identified. Non-native fish disrupt natural aquatic systems by preying on native fish and amphibians. The Mountain Lake Enhancement Plan does not specifically address measures that provide for control of non-native fish and amphibian populations, nor reintroduction strategies for native wildlife within the Lake; however, the PTMP does acknowledge the problem and defines treatments to create a deeper and cleaner lake.

Arthropods

Little is known about arthropods that have no special status. One study conducted at Lobos Dunes in 2000 identified much diversity at that site (Lacabanne 2000). This study found that human impacts affecting wind and wind "blowouts" were major factors affecting dune ecology. The introduction of non-native grasses also has had a great negative effect on biodiversity at Lobos Dunes and the PSHS. Non-native grasses colonize open sand, use nutrient resources, soil, and water, and result in the loss of plant and animal diversity, and the progression of natural succession. Planted or accidental introductions of other non-native plant species, habitat fragmentation by construction of the coastal highway, and military occupation are some human influences that have altered the natural terrain and ecosystem processes that native central dune habitat requires to function properly. These activities changed natural wind disturbances, interrupted the progression of sand movement inland, changed soil chemistry, and affected resources needed for the reproduction of native species, including arthropods.

Special-Status Animal Species

Special-status species of animals are those legally protected under the FESA, species proposed or candidates for listing under FESA, and "sensitive" species that are considered sufficiently rare by the scientific community to qualify for such listing. As a federal agency, in Accordance with Section 7 of the FESA, the Trust is required to consult as necessary with the USFWS to ensure that its actions do not jeopardize the continued existence of species listed as endangered or threatened under FESA or their designated Critical Habitats. Section 7 consultation with the USFWS was initiated during the scoping phase for the PTMP and will continue to ensure that the plan is in compliance with federal law and will not jeopardize the continued existence of any special-status species nor its habitat. Special-status animal species that could potentially occur or are known to occur on the Presidio are designated in Table 5.

Surveys have been conducted for the California red-legged frog (*Rana aurora draytonii*), San Francisco forktail damselfly (*Ischnura gemina*), Leech's skyline diving beetle (*Hydroporus leechi*), and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*). Surveys were conducted in 1992 and 1994 by Dr.

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Table 5: Occurrence and Potential Occurrence of Special-Status Wildlife Species on the Presidio

Common Name	Scientific Name	Federal/State Status	Habitat	Area
San Francisco forktail damselfly	<i>Ischnura gemina</i>	(FSC)/-	Observed near Fort Point (Potential habitat at Seeps and Springs in Area B)	A
Globose dune beetle	<i>Coelus globosus</i>	(FSC)/-	Dunes and sandy areas such as Crissy Field, Baker Beach. None observed.	A
Ricksecker's water scavenger beetle	<i>Hydrochara rickseckenii</i>	(FSC)/-	Riparian areas such as Lobos Creek. None observed.	A
Bumblebee scarab beetle	<i>Lichnanthe ursina</i>	(FSC)/-	Dunes and sandy areas such as Crissy Field, Baker Beach. None observed.	A
Mission blue butterfly	<i>Icaricia icarioides missionensis</i>	FE-/ CDFG overwintering phenomenon	Coastal scrub with populations of <i>Lupinus albifrons</i> , <i>L. variicolor</i> (known from the Presidio), and <i>L. formosus</i> . None observed.	A
Monarch butterfly	<i>Danaus plexippus</i>		Eucalyptus Grove North of Kabbee Drive in winter.	
Winter-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FT/SE	San Francisco Bay, Lobos Creek. None observed.	A
California red-legged frog	<i>Rana aurora draytonii</i>	FT/CSC, Protected	*Recorded from Mountain Lake; following restoration, Lobos Creek may be suitable, but prefers ponds and lakes. None observed.	(A)
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	(FSC)/CSC, Protected	*Mountain Lake, but now extirpated. None observed.	(A)
San Francisco garter snake	<i>Thamnophis sirtalis tetrataenia</i>	FE/SE, Fully Protected	Never occurred in San Francisco; requires ponds or marshes with emergent vegetation and red-legged frogs. None observed.	Ø
Brown pelican	<i>Pelecanus occidentalis</i>	FE/SE, Fully Protected	Occurs along coastal areas of Presidio	A
Bald eagle	<i>Haliaeetus leucocephalus</i>	FT Delisted/SE, Fully Protected	Migrates through San Francisco and Presidio	A,B
Peregrine falcon	<i>Falco peregrinus</i>	FT Delisted/SE,	Migrates through San Francisco and Presidio	A,B
Yellow warbler	<i>Dendroica petechia brewsteri</i>	CSC		
Saltmarsh yellowthroat	<i>Geothlypis trichas sinuosa</i>	FSC	Mountain Lake	B
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSC	Rare winter visitor	A,B
Willow flycatcher	<i>Empidonax traillii</i>	-/SE	*Recorded from Lobos Creek	A
Yuma Myotis	<i>Myotis yumanensis</i>	(FSC)/CSC	Potentially detected over Mountain Lake in 1994	A

Source: California Department of Fish and Game Special Animals (January 2000).

Notes:

Status definitions:

- = no listing status
- Federal: U.S. Fish and Wildlife Service (50 CFR 17.12, 61 FR 40:7596-7613, Feb. 28, 1996)
- FE = listed as endangered under the federal Endangered Species Act
- FT = listed as threatened under the federal Endangered Species Act
- (FCS)= Federal Special Concern Species (former Category 2 candidates)
- State: California Department of Fish and Game (1995)
- CE = listed as endangered under the California Endangered Species Act
- CT = listed as threatened under the California Endangered Species Act
- CSC = California Special Concern Species

*Historical occurrence

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John Hafernik of San Francisco State University at Mountain Lake, Lobos Creek, and other areas within the Presidio (Hafernik and Mead 1992; Jones & Stokes Assoc. 1995). Additional surveys have been conducted for the Lobos Creek restoration plan (PWA 1995). More recent surveys for the forktail damselfly have been conducted by Presidio staff. Surveys for sensitive amphibians (western pond turtle and California red-legged frogs) were conducted in 1994 by E. Ely and later by Presidio staff.

Based on the above surveys for listed sensitive species, only the San Francisco forktail damselfly has been found to occur on the Presidio. A small population of San Francisco forktail damselflies has been located in a drainage feature near Fort Point.

At Mountain Lake, no confirmed western pond turtles were found in surveys conducted for the Presidio Management Plan (Jones & Stokes 1995) nor in visual surveys conducted in 1996 by the Park and in 2000 by California Academy of Science (personal communication Laws). Only introduced red-eared sliders (more than 30 individuals) and soft-shelled turtles have been observed at Mountain Lake.

Historically, the federally threatened California red-legged frog (*Rana aurora draytonii*) and Federal Species of Concern western pond turtle (*Clemmys marmorata*) were likely abundant at Mountain Lake. The California Academy of Science has a record of a red-legged frog collected from Mountain Lake prior to 1906 (personal communication Vindum). Currently, there is only one known population of California red-legged frogs in San Francisco (personal communication Ely). No historic references to western pond turtles at Mountain Lake have been found, although references to western pond turtles collected in San Francisco between 1856 and 1892 have been found in museum collections (M.R. Jennings and M.P. Hayes 1994).

The cause of native turtle and frog absence at Mountain Lake could be related to overharvesting for food sources (Lockington 1879; Jenning and Hayes 1984), introduced predators, abnormally high densities of native predators, and loss of adjacent terrestrial habitat. Pre-1900 frog harvest data

suggest a short-lived, but heavy exploitation to supply demand in San Francisco markets. As with the California red-legged frogs, a considerable market was present for turtles in the late 1800s (Holland 1991). Depletion of native turtle populations within San Francisco and adjacent areas resulted in hunters moving as far away as the San Joaquin Valley to supply demand (Holland 1991). Turtles also face almost certain reproductive failure in areas of abnormally high predators. Raccoon predation has reportedly resulted in the loss of up to 97 percent of turtle nests in a given area (Holland 1994).

Special-Status Arthropods

Seven special-status arthropod species have the potential to occur on the Presidio, because the Presidio is within their known geographic range, and specific habitats required by these species are present (Table 5). In 1994, surveys were conducted to provide presence or absence data for Federal Species of Concern, including the San Francisco forktail damselfly (*Ischnura gemina*), the globose dune beetle (*Coelus globosus*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), Leech's skyline diving beetle (*Hydroporus leechi*), the bumblebee scarab beetle (*Lichnanthe ursina*), the tree lupine moth, and the federally endangered mission blue butterfly (*Icaria icariodes missionensis*).

Neither the globose dune beetle nor the bumblebee scarab beetle was found in coastal sand dune habitat on the Presidio. However, a number of mydas flies (*Nemomydas temnipes*) were collected in coastal sand dune habitat. The mydas fly has no special legal status. However, it is potentially rarer and more threatened than the federally-listed Mission blue butterfly (Hafernik 1994). The Presidio is the only place where the species has been observed recently.

Although Leech's skyline diving beetle is widely distributed in the western United States, there little published information concerning its natural history. It is believed to have been extirpated from its type locality along Skyline Boulevard in Pacifica, San Mateo County. No skyline diving beetles were observed during surveys of suitable aquatic habitats at Lobos Creek and Mountain Lake.

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The Mission blue butterfly inhabits grasslands and coastal scrub communities. Its larvae feed on three perennial species of lupines occurring in nearby San Mateo County. On the Presidio, *Lupinus albifrons* occurs in native grassland areas and *Lupinus variicolor* occurs on coastal bluffs near the Golden Gate Bridge. Surveys of this area, however, did not detect eggs, larvae, or larval feeding damage. Based on the known distribution of the Mission blue, it is unlikely that the Presidio was ever part of its historic range (Hafernik 1994).

The monarch butterfly's life cycle incorporates a southward migration from northern breeding grounds to warmer, over-wintering areas on the coast. Along the migration route, particular staging grounds have been identified as necessary to the continued survival of this species. Monarch butterflies were observed in a grove of eucalyptus trees located north of Kobbe Drive in 1986. This eucalyptus grove continues to provide a winter roost site for monarch butterflies between the months of November and February or March. An additional over-wintering site is also located south of the roosting site. Under California law (1988 Statutes Chapter 540), over-wintering colonies of the monarch butterfly are recognized as "special resources" in California. The International Union for the Conservation of Nature and Natural Resources has determined that the protection of over-wintering colonies is a top priority and that the colonies should be considered a "threatened phenomenon." The California Department of Fish and Game has been charged with delineating wintering colonies and establishing management plans to maintain the viability of this population. Although the State of California and California Department of Fish and Game regulations do not apply to federal land, the designation of the monarch butterfly as a special resource indicates that it is a species in decline.

Ricksecker's water scavenger beetle is a rare, relatively unknown beetle that has been collected in only six localities in creeks, ponds, and vernal pools in the San Francisco Bay Area. No Ricksecker's water scavenger beetles were observed during surveys of suitable aquatic habitats at Lobos Creek and Mountain Lake.

The San Francisco forktail damselfly is endemic to the San Francisco Bay Area. Populations are known from coastal and bay wetlands from Santa Clara to Marin and Sonoma Counties. The forktail damselfly is one of the most restricted in distribution. However, recent discovery of new populations in Sonoma County have resulted in the status of this species being downgraded from a Federal Species of Concern. The San Francisco forktail damselfly was observed in two consecutive years (Fall 1999 through Spring and Fall 2000) in a seep area along Marine Drive in Area A, near Fort Point. Although closely-related damselfly species have been observed, no forktail damselflies were observed in areas surveyed (i.e., potential aquatic habitat occurring at Lobos Creek, Mountain Lake, and Dragonfly Creek in Area B). In Area B, potential habitat for the San Francisco forktail damselfly (open still-water pools with fringing vegetation and sunny spots for perching) is present in Tennessee Hollow and in a seep behind Building 926. At present, Dragonfly Creek may be too shady to provide optimum habitat for the San Francisco forktail damselfly (personal communication Castellini).

The tree lupine moth (*Grapholita edwardsiana*) occurs in coastal sand dunes in the San Francisco Bay Area in association with its larval food plant *Lupinus arboreus*. Because the adult moth is common where tree lupine occurs, its status has been downgraded from a Federal Species of Concern. The tree lupine moth was found to be common near Lobos Creek in 1988 and continues to be common on tree lupines found throughout the Presidio and at Mountain Lake.

The Xerces blue butterfly (*Glaucoopsyche xerces*) lived in coastal sand dunes in the vicinity of San Francisco. It was last observed in the Presidio, and in 1941, was determined to be extinct.

Special-Status Fish

Several special-status fish species occur in San Francisco Bay on their way to spawning grounds in tributaries of the bay and delta (Table 6). However, no spawning habitat for these species is present in the vicinity of the Presidio. Pacific herring are not listed by the State of California or the federal government; however, because they are harvested for their roe, they are an important species in the economy of the San Francisco Bay Area. As such, the

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Table 6: Special-Status Marine Species Potentially Affected by Activities in Area A and Area B

Species	Status
Fish	
1 Winter-run Chinook salmon	State and Federal Endangered
2 Fall/late fall-run Chinook salmon	Federal Candidate Species
3 Spring-run Chinook salmon	State Threatened, Federal Threatened
4 Coho Salmon Central California ESU	Federal Threatened (State listing only applies to those spawning populations south of San Francisco Bay)
5 Steelhead South/Central California ESU	Federal Threatened
6 Steelhead Central Valley ESU	Federal Threatened
7 Delta Smelt	State and Federal Threatened
Other Fish Species of Concern	
River Lamprey	(Federal Species of Concern)
Green sturgeon	California State Species of Concern
Pacific herring	(Federal Species of Concern)
	California State Species of Concern
	Pacific herring are not listed at either the State or Federal level, however, they are an important economical and ecological species in the San Francisco Bay.
Reptiles	
Sea turtles	All sea turtles are listed as Federal Endangered or Threatened, but the status in San Francisco Bay area is unknown.
Birds	
Included because of human activity in foraging areas.	
1 California Brown Pelican	State and Federal Endangered (nesting colony)
2 Peregrine Falcon	Federal Delisted, State Endangered
3 California Least Tern	State and Federal Endangered
Marine Mammals (a)	
All are protected under the Marine Mammal Protection Act. Harbor seals, California sea lions, and Steller's sea lions potentially occur within the off-shore vicinity of the Presidio.	

Source: U.S. Fish and Wildlife Service. Correspondence. September 3, 1998.

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CDFG gives herring special consideration and requires use of protective measures during sensitive times of the year. The only project-related impacts on fish occurring in San Francisco Bay or the Pacific Ocean would be impacts from stormwater runoff.

Special-Status Reptiles and Amphibians

Lobos Creek is within the historic range of the California red-legged frog, the southwestern pond turtle, and the legless lizard. However, these species have not been observed in recent surveys and are not expected to occur in the Lobos Creek corridor or elsewhere on the Presidio. Non-native bullfrogs, non-native fish, and red-eared sliders that prey on red-legged frogs and turtles occur in Mountain Lake. At this time, San Francisco County has not been proposed by the USFWS as Critical Habitat for the California red-legged frog (USFWS 2000).

Special-Status Birds

A total of 29 special-status and watchlist bird species have been observed on the Presidio (Jones & Stokes 1997). Almost half of these species are seasonal visitors or rare or uncommon migrants flying over the Presidio during their spring and fall migration along the Pacific flyway. Migratory birds could rest at Mountain Lake. Many of the special-status bird species occur in the ocean or San Francisco Bay. Six special-status bird species have been known to occur along Lobos Creek.

Four special-status passerines (song birds) have been recorded at the Presidio: loggerhead shrike, willow flycatcher, yellow warbler, and saltmarsh yellowthroat. The loggerhead shrike occurs throughout the United States, Mexico, and central Canada, and is a year-round resident in California. The shrike prefers open grassland with interspersed patches of scrub or wooded habitat. The loggerhead shrike formerly occurred in open areas in San Francisco such as Lake Merced, Golden Gate Park, McLaren Park, and Candlestick Park. There are no nesting records for San Francisco County. The willow flycatcher and yellow warbler are summer and fall migrants, using dense willow habitat within the north and east arms of Mountain Lake for roosting areas. Neither nests on the Presidio because nesting habitat is limited. Although observed in all seasons, common

yellowthroats are uncommon visitors to Mountain Lake. It is suspected that they nest in emergent vegetation surrounding the Lake. The saltmarsh yellowthroat is the most likely subspecies of common yellowthroat to occur on the San Francisco peninsula. However, the subspecific status of yellowthroats at Mountain Lake has not been determined. In addition, the olive-sided flycatcher, sharp-shinned hawk, Coopers hawk, and merlin occur in the vicinity of Mountain Lake. Figure 22 shows areas where special-status bird species occur, including habitat considered sensitive because it is used by breeding resident and migratory birds, resting for fall migrants, and a population of California quail.

The establishment of a population of California quail on the Presidio is significant because quail populations have declined dramatically in urban areas due to loss of habitat, and disturbance and predation by domestic dogs and cats. Because they have been extirpated or are extremely rare elsewhere in San Francisco, and are restricted in distribution, the California quail, western screech owl, wrentit, and Hutton's vireo could be considered species of local concern, although they are not state or federally listed. A mated pair of western screech owls might have been historically observed on the Presidio, and recent surveys have indicated their presence at Inspiration Point. Although they are not federal or state-listed species, the CDFG considers some raptors to be a California Species of Concern when nesting. Of these raptors, the Cooper's hawk, sharp-shinned hawk, and northern harrier occur (non-breeding) on the Presidio. The CDFG considers these hawks to be California Species of Concern while they are nesting (CDFG 2001). The merlin is considered to be a California Species of Concern in areas where it spends the winter. Only the more common raptor species, such as red-tailed and red-shouldered hawks and American kestrel, have been confirmed as breeding on the Presidio. However, these species are considered to be special-status species by the Golden Gate chapter of the Audubon Society due to their small populations and restricted available resources within the Presidio.

Special-Status Mammals

Two special-status mammals have been observed on the Presidio (Harris 1993). The salt marsh vagrant shrew is restricted to saltmarsh habitats in the southern and central San Francisco Bay Region, and might have occurred in salt marshes

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located between Fort Point and Crissy Field in Area A, although there are no records documenting its presence there (Jones & Stokes 1997). No suitable habitat for the shrew occurs in that area today, although restoration of the Crissy Field tidal marsh could create new habitat for the shrew in the future.

The *Yuma myotis* is the only bat species known to occur on the Presidio (Pierson 1995). It is somewhat tolerant of human disturbance, and is one of the few species of bats persisting in relatively urbanized areas.

Marine mammals potentially occurring along the shores of the Presidio include harbor seals, California sea lions, and Steller's sea lion. These species are protected by the Marine Mammal Protection Act. Because no haulouts or rookeries of these species occur in the vicinity of the Presidio (CNDDB 2001), no further discussion of marine mammals is provided in this EIS.

Exotic Animals

Introduced mammal species occurring on the Presidio include the house mouse and Norway rat. Introduced bird species include the rock dove (common pigeon), European starling, and house sparrow. These are aggressive species, which often outcompete native species for nesting sites and food. Introduced bullfrogs and fish also impact native fauna by competing for habitat and preying upon native wildlife. Feral domestic cats prey upon both exotic and introduced wildlife and are responsible for a dramatic decline in native songbirds in urban areas. Dogs, on- or off-leash, could have negative impacts by pursuing wildlife and by scent-marking.

At the Presidio, native pests are defined as animal or plant populations that interfere with the purposes of the Presidio/park. Native pests would be allowed to function unimpeded except where control is desirable to prevent the loss of the host or host-dependent species from the ecosystem; to prevent outbreaks of the pest from spreading outside the Presidio; to conserve threatened, endangered, or unique plant specimens or communities; to preserve, maintain, or restore the historical integrity of cultural resources; to conserve and protect plants and animals in developed

zones; and to manage a human health hazard as defined by the Centers for Disease Control or to protect against a significant threat to public safety.

IPM methods to control exotic animals include habitat manipulation and reduction of food sources. Elimination of sources of visitor-generated food wastes that attract animal pests is (and will continue to be) accomplished by providing an adequate number of waste receptacles and collecting waste on a daily basis. Older buildings will be inspected for holes or cracks providing entry to rodents, and sealed if necessary.

Natural Resource Research, Inventories, and Monitoring

The Trust and NPS have been and will continue to conduct inventories and research on existing wildlife and habitats, allowing for a greater understanding of the value of open space at the Presidio. Monitoring will detect and describe any changes in this fragmented habitat over time. The current joint Trust and NPS effort to restore habitats and corridors for California quail near the PSHH demonstrates the interplay of habitat protection, restoration, and corridor enhancement.

Additional inventories will be performed to determine the presence of terrestrial invertebrate and vertebrate species. Further studies are also needed to gain information about maintaining the health of Presidio wildlife populations and their habitats. Wildlife surveys of the Presidio will be conducted as part of projects and monitoring programs. The Presidio is currently developing a program to monitor migrating and nesting birds. A monitoring system will be established in order to collect information on use of habitats occurring in the Presidio by raptors, bats, mammals, reptiles, amphibians, rare insects, and aquatic species. The feasibility of reintroducing individual native wildlife populations will be explored on an individual basis.

To the extent possible, information will be shared with interested scientific and local communities.

All research, data gathering, and specimen collection will be carried out in accordance with professional standards pertaining to survey, inventory, monitoring, and research. Independent studies conducted in parks are not required to address specifically identified management issues or information

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needs. However, these studies, including data and specimen collection, require scientific collecting permit. Projects will be administered and conducted only by fully qualified personnel. Information gained will be used to prepare and periodically update natural resource management plan that is prepared jointly with the NPS. Similarly, high-quality, scientifically acceptable information, data, and impact assessments will guide planning for Presidio operations, development, and management activities that might affect natural resources.

3.3.2 WATER RESOURCES

WETLANDS, STREAMS, AND DRAINAGES

There are approximately 58.5 acres of water features, including wetlands, and other special aquatic areas described in this section. These areas include those subject to jurisdiction of the Corps under Section 404 of the Clean Water Act of the United States (CWA), and USFWS wetlands according to the Cowardin classification (Cowardin *et. al.*, 1979), which will receive protection by the Trust and NPS under Executive Order 11990; and wetland-like areas (Figure 19). Notable water features include Lobos Creek and scattered seeps and drainages in Area A, Mountain Lake, Dragonfly Creek, El Polin Spring, tributaries in the Tennessee Hollow watershed, and a number of seeps in the Fort Scott and South Hills Planning Districts.

Many of the wetland features in the Presidio are subject to Section 404 of the CWA. These potential jurisdictional waters of the U.S., including wetlands total 28.0 acres (Figure 19), and meet all three criteria of supporting wetland soils, wetland vegetation, and wetland hydrology. An additional 30.6 acres of wetlands defined by the USFWS Cowardin classification system. This definition requires that only one criterion (soils, vegetation, or hydrology) be attained. This definition expands wetland areas to include features such as mudflats and rocky intertidal zones, and classifies wetlands rather than delineating them. The Trust uses the USFWS definition, and has adopted a planning principle of protection, enhancement and “no net loss” of existing wetland features; the Trust will strive to achieve a longer-term goal of net gain of wetlands through restoration of previously degraded or destroyed wetlands, such as

Tennessee Hollow, where natural drainage features have been largely eliminated and/or altered by past filling, grading and construction, leaving only isolated segments of the riparian corridor.

Wetlands studies conducted on the Presidio include Presidio of San Francisco Wetland Resources Report,¹ a wetland delineation and vegetation study (Wood 1999), a bioassessment conducted in Presidio watersheds as a baseline study for riparian restoration plans (Castellini 2000), and a wetlands delineation of Mountain Lake (Buisson, E, and L. Castellini 2000).

Applicable Laws and Regulations

The following discussion provides an overview of the CWA and other laws and regulations relevant to wetlands and streams. These laws and policies mandate that the filling of wetlands be avoided to the greatest extent possible. If development activities result in adverse impacts to wetland features, they could result in conditions of approval requiring mitigation. Each permit action is also subject to compliance with NEPA.

Section 404 of the Clean Water Act – Wetlands and other water resources receive protection under Section 404 of the CWA. The CWA requires that a permit be obtained from the Corps prior to the discharge of dredged or fill materials into any “waters of the United States.” Waters of the United States are broadly defined in the Corps’ regulations (33 CFR 328) to include navigable waterways, their tributaries, and adjacent wetlands. The upper limit of jurisdiction in non-tidal streams and lakes is defined by the ordinary high-water mark or the upper boundary of adjacent wetlands, whichever is higher.

Wetlands are defined by the CWA as: “Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Under this definition, three criteria

¹ Includes U.S. Army Corps of Engineers Potential Jurisdictional Waters of the U.S., Including Wetlands and U.S. Fish and Wildlife Service Wetlands Inventory (2002)

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must be attained for classification as a jurisdictional wetland: dominance of wetland vegetation, presence of wetland hydrology (inundation or saturation for a specific period of time), and the occurrence of hydric (wetland) soils.

A second wetland definition reflecting the broader habitat values associated with wetlands is the definition of wetlands used by the USFWS for their National Wetlands Inventory. The USFWS Cowardin system classifies wetlands based on vegetative life form, flooding regime, and substrate material. For the purposes of this definition, wetland features must attain one or more of three criteria. The Trust classifies and maps wetlands using this system.

Wetlands and other waters of the United States subject to Section 404 of the CWA in the Presidio include Lobos Creek in Area A (one of the last flowing perennial creeks in the City of San Francisco); Mountain Lake; El Polin Spring; tributaries and portions of the Tennessee Hollow drainage within the East Housing Planning District; and scattered seeps and drainages in Area A, and the Fort Scott and South Hills Planning Districts.

Section 401 Clean Water Act – The California Regional Water Quality Board (RWQCB) and the U.S. Environmental Protection Agency (EPA) set water quality standards that are ecologically protective to aquatic systems (RWQCB, 1995; EPA, 2000). Water Quality Certification or waiver from the RWQCB is required before a Section 404 permit becomes valid. The RWQCB also reviews the project for consistency with Waste Discharge Requirements under the State land disposal regulations. In reviewing the project, the RWQCB may consider impacts to waters of the State, and may recommend mitigation for filling of wetlands and other impacts in accordance with the State wetland policy.

Federal Executive Orders (EOs)

Two EO's require federal agencies to assure the protection of wetlands in undertaking federal actions. These EO's are internal management tools by which the President develops and communicates policy applicable to the executive branch. EO 11990 (Protection of Wetlands) was issued in 1977 "...to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid

direct or indirect support of new construction in wetlands wherever there is a practicable alternative..." This order provides that federal agencies are to take a leadership role in the preservation and enhancement of wetlands. Agencies are directed to include wetlands considerations in their assessments under NEPA. Projects underway and emergency assistance efforts were exempted from this EO. EO 11988 (Floodplain Measurements) was issued in 1977, and instructs federal agencies to avoid undertaking activities that would adversely affect floodplains or floodplain management.

The Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management (October 2000) provides a framework for a watershed approach to federal land and resource management activities. The policy incorporates the following guiding principles: use a consistent and scientific approach to manage federal lands and resources and to assess, protect, and restore wetlands; and identify specific watersheds in which to focus funding and personnel and accelerate improvements in water quality, aquatic habitat, and watershed conditions.

Streams, Lakes, and Wetlands

The Marina watershed, which includes the Tennessee Hollow subwatershed and the Fort Scott watershed (including that of Dragonfly Creek) drain the northeastern half of the Presidio into San Francisco Bay. Combined, these northeastern slopes of the Presidio produce perennial wetlands draining down valleys, such as Tennessee Hollow, and out of the Fort Scott highlands. Seeps, springs, and streams once drained into a large coastal estuary, approximately 18 acres of which have been recreated by the NPS and Golden Gate National Parks Association in Area A. The Tennessee Hollow subwatershed supports three tributaries, El Polin Spring being the source of the middle tributary. Stream flow of the El Polin/Tennessee Hollow drainage system is mostly confined to open concrete ditches or underground culverts. Groundwater discharge in the form of springs is present in the central tributary (El Polin Spring) and the eastern tributary. Outfall from this subwatershed is discharged on the southeastern shore of the Crissy Field wetland. The Fort Scott watershed supports springs that feed Dragonfly Creek, a perennial stream located east of the parade ground, adjacent to Ralston Avenue. The stream flows over a natural sandy substrate before entering a section of concrete channel leading to an

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underground culvert where it discharges to the bay. These primary watersheds and the Presidio's third watershed, the Lobos Creek watershed, are sub-divided into a total of six subwatersheds². The Lobos Creek watershed drains the southwestern and western areas of the Presidio into the Pacific Ocean. The southern extent of this watershed, a wind-driven build-up of sands from the massive dune system that once occupied western San Francisco dammed up perennial seeps and springs occurring along the southwestern slopes of the Presidio's serpentine divide, forming Mountain Lake, Lobos Creek, and smaller dune seeps. One dune wetland feature within the watershed, located north of the PHS, supports characteristics of a dune slack wetland. Its associated vegetation assemblage is the only remnant example of this vegetation type on the northern San Francisco peninsula. The northwestern extent of the watershed is comprised of dune and serpentine bluffs. The serpentine bluffs are comprised of steep drainages, many of which support uniquely formed seasonal seeps. Numerous natural wetlands occupied both dune areas of Lobos watershed and the serpentine slopes and lowlands of the Tennessee Hollow subwatershed. Many of these wetlands are now largely altered or gone. Although wetlands are widely distributed throughout the Presidio's natural areas, they are generally very restricted in area. Because the Presidio is one of the last refuges for San Francisco's once widespread and richly diverse wetlands, and because a diversity of resident and migratory wildlife species are dependent upon them, wetlands occurring on the Presidio have a special conservation value regardless of their jurisdictional status.

Mountain Lake, which is in part also under the jurisdiction of the City of San Francisco, is a natural spring-fed, lake in the South Hills Planning District. Because of numerous direct and indirect human impacts over time, Mountain Lake is now 40 percent smaller in area and less than one-third of its original depth. Water quality has declined and periodic algal blooms and

² Mapping boundaries were developed such that several smaller drainages located in the western coastal serpentine bluffs were combined into single sub-watersheds (NPS, 2001)

fish kills occur. Water quality and terrestrial habitat enhancement measures are addressed in the Mountain Lake Enhancement Plan (2001).

Lobos Creek is the last free-flowing stream in the City of San Francisco. It is fed by seeps and springs from a sandy aquifer that receives recharge from the golf course and extends south of the Presidio. Lobos Creek is approximately one mile long. From its headwaters near the 17th Avenue, the creek flows westward toward Lincoln Boulevard, where it meanders in a narrow channel and through an approximately 500-foot long underground culvert. In December 1996, the Richmond Transport Project removed the Lobos Creek outfall structure and the creek now discharges directly into the ocean at Baker Beach. The Trust is working the NPS to ensure that adequate streamflow remains in the creek to maintain a channel and to support fish and wildlife.

Activities of early settlers resulted in substantial physical and biological changes that affected the species composition and spatial arrangement of plant communities along Lobos Creek and influenced its present day ecology. However, Lobos Creek supports one of the least fragmented pieces of undeveloped riparian habitat in the City and one of the areas of highest wildlife habitat value in the Presidio (Harding Lawson 1996).

The hydrologic characteristics of many of these wetland features have been substantially altered by the construction of buildings, placement of fill, and the removal and alteration of vegetation cover. Activities proposed under PTMP could further reduce or prevent the restoration of key hydrologic features.

Ocean and Bay

Area B directly affects ocean environments through the withdrawal of water at Lobos Creek. This activity changes the creek and ocean ecological system within that interface. Other activities within the Presidio could lead to contaminated stormwater runoff, which, if allowed to reach the bay or ocean, could adversely affect special-status fish species and marine mammals, as discussed in the previous Biological Resources section.

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Water Quality

The Presidio has implemented and is operating under the Presidio of San Francisco Stormwater Management Plan (1994), which includes a detailed Storm Water Pollution Prevention Plan that outlines erosion prevention and sedimentation control measures used by the Presidio to avoid contamination of storm drains and surface water resources. The Stormwater Management Plan is being updated to reflect changes in storm water routing as well as new permitting requirements. Water quality is also addressed for specific water resources, including Lobos Creek, Mountain Lake and Marsh.

The water quality of surface and groundwater resources related to Lobos Creek is monitored regularly. The Lobos Creek Water Quality Management Plan (Urban Watershed Project 2001), produced as a collaborative effort with the NPS, serves as a basis for a joint program to improve water quality of the creek between the Trust, the NPS and the City and County of San Francisco. A new water collection system and culvert under Lincoln Boulevard will be constructed, and will lead to a better natural creek system, as well as more dependable water quality.

The Mountain Lake Enhancement Plan was recently developed to improve water quality in the lake, restore surrounding native habitat, and improve visitor access. The proposed plan includes dredging and mechanical aeration to improve water quality, exotic species removal, native plant community restoration, trail improvements, interpretive overlooks, and restoration of the lake's former east arm.

Storm water runoff at the Presidio is treated with a series of oil and water separators before discharge into Crissy Marsh. Water quality objectives and numerical water quality standards for Crissy Marsh are established in the RWQCB water quality control plan (basin plan) to protect the established beneficial uses of the water bodies (RWQCB 1995). The beneficial uses for groundwater and surface water at Crissy Field are identified in the Basin Plan and are applied by the RWQCB on a case-by-case basis. Important beneficial uses designated for the bay include contact and noncontact recreation, commercial sport fishing, and shellfish harvesting.

Hydrogeology

This section briefly describes the geologic units found on the Presidio and the occurrences of groundwater.

The Presidio's underlying stratigraphy consists primarily of unconsolidated sediment of the Colma formation that overlies the Franciscan formation, a complex assemblage of sandstone, siltstone, shale, and metamorphic rocks (Schlocker 1974). The Colma formation consists of fine- to medium-grained sand with moderate amounts of clay and silt. Sediments are generally unconsolidated and were deposited in estuarine and coastal environments. Much of the Lobos Creek watershed and northern Presidio support dune and beach sands and estuarine sediments. Serpentinite outcrops and serpentine and Franciscan soils are found along the western coastal bluffs and within parts of the Marina basin.

Groundwater at the Presidio occurs within Colma formation, dunes, in Bay Mud and artificial fill and Franciscan bedrock. It occurs in both the bedrock and overlying unconsolidated sediments. The quantity and quality of groundwater are highly dependent on the type and thickness of the geologic materials present. In addition, the historic land uses within the Presidio have affected groundwater quality in some areas. Subsurface data are currently lacking on the Presidio, and a thorough understanding of the natural groundwater complexity of both the Franciscan bedrock and the Colma formation aquifers is lacking. Some subsurface groundwater data have been collected as a part of the Wetland Feasibility Study (Dames & Moore 1995), the Environmental Remediation Program (Erler & Kalinowski, Inc. 2000), the Doyle Drive Hydrology and Water Resources Technical Report, and is ongoing as a part of the Tennessee Hollow restoration effort.

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3.3.3 VISUAL RESOURCES

OVERVIEW OF THE VISUAL CHARACTER OF THE PRESIDIO

Presidio Setting

Located at the northern tip of the San Francisco peninsula, the 1,490-acre Presidio of San Francisco is bordered by the San Francisco Bay on the north, the Pacific Ocean on the west, and the City of San Francisco on the south and east. The Presidio is visible from many viewpoints around the Bay, including the Marin Headlands, Mount Tamalpais, Angel and Alcatraz Islands, and from San Francisco's waterfront and elevated areas within the city, such as Twin Peaks.

The Presidio of San Francisco is part of the GGNRA and the National Park system. As such, and subject to the Trust Act, the Trust manages the Presidio's significant scenic resources in a manner consistent with sound principles of land use planning and management, and that protects the Presidio from development and uses that would destroy its scenic beauty.

The Presidio is a major visual resource for the San Francisco Bay Area from a variety of perspectives. From a distance, the forested landscape appears as a natural wooded series of low ridges in marked contrast to surrounding urban landscapes.

From a vantage point in the Marin Headlands, the entire Presidio is visible, with the Golden Gate Bridge in the foreground and the City of San Francisco in the background. The western edge of the Presidio slopes steeply from the Pacific Ocean covered with pale, grey-green coastal scrub vegetation that moves upslope to the dark green forest that tops the hills in the park. On the north coastal area, the slopes are steep near the foot of the Golden Gate Bridge, at Fort Point. From the San Francisco Bay, past the level expanse of Crissy Field, warehouse buildings that border the former airfield are framed by the densely vegetated hills. Other buildings are visible within the Presidio in addition to those at Crissy Field, but it is the forested landscape that dominates its visual character. From this or any

other perspective, the dense stands of trees within the Presidio easily differentiate it from the adjacent City of San Francisco.

Entering the Presidio from the Golden Gate Bridge (U.S. Highway 101/ Doyle Drive), motorists travel along an elevated roadway that passes through the Presidio. From this roadway, developed areas within the Presidio are visible, but the character of the area is park-like.

Important Views

One of the factors that affected the selection of the Presidio for use as a military post was the availability of strategic views of the Pacific Ocean and the Golden Gate. Those views that were once strategic now offer visitors opportunities for enjoyment of the park. As shown in Figure 24, views from within the Presidio include vistas toward the Golden Gate Bridge, Marin Headlands, Angel Island, and Alcatraz, as well as to the Pacific Ocean and San Francisco Bay. Other vistas that once provided distant views are now obscured to some degree by vegetation, including Inspiration Point, along Washington Boulevard on the western slope of Rob Hill, and on Lincoln Boulevard overlooking Crissy Field. Other important historic and contemporary vista points within the Presidio include Presidio Boulevard, views from the Leiterman Planning District, Infantry Terrace, Main Post, Golden Gate Bridge Overlook, coastal overlooks, World War II Memorial, Wherry housing, and the PSH.

In addition to distant views from the Presidio, visitors experience a sense of visual enclosure within the natural areas and forests of the Presidio, in contrast to the visual experiences of the nearby cityscape outside of the Presidio. Historically, visual links were created between different developed areas within the Presidio, such as between the Officers' quarters on Infantry Terrace and the main parade ground, and between the main parade ground and Crissy Field, although some of these vistas have been obscured by vegetation and new construction.

Views from Bay Area counties surrounding the Presidio are affected from by the amount of light shining into the night sky, especially in areas adjacent to the Golden Gate Bridge, a prime viewing site.

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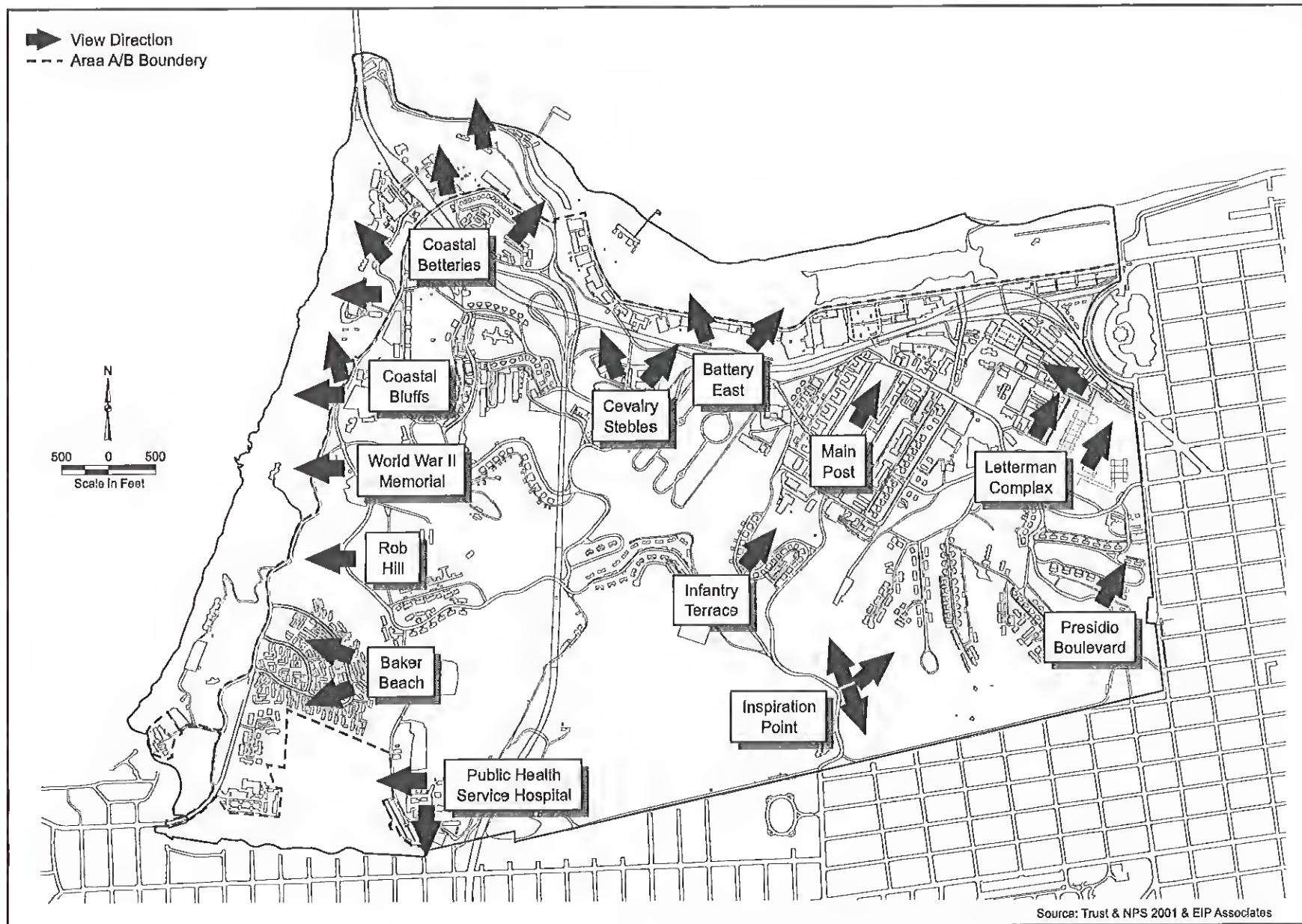


Figure 24: Historic and Contemporary Views and Vistas

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3.3.4 AIR QUALITY

This section discusses regulated pollutants, air quality management plans, air quality conditions and monitoring, and the local emissions source inventory.

REGULATED POLLUTANTS

Through the federal Clean Air Act as amended, and the California Clean Air Act as amended, federal and state regulatory agencies set upper limits on the ambient airborne concentrations of six criteria pollutants. These are ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter, and lead. Particulate matter is regulated as inhalable particulate matter less than ten microns in diameter (PM₁₀), and fine particulate matter less than 2.5 microns in diameter (PM_{2.5}). Ozone is a secondary pollutant formed by the reactions of nitrogen oxides (NO_x) and reactive organic gases (ROG). Nonattainment status is designated by the agencies for areas where the ambient air quality standards are not met. The nine-county San Francisco Bay Area Air Basin has a history of recorded violations of federal and state ambient air quality standards for ozone, carbon monoxide, and PM₁₀, the attainment status for PM_{2.5} is unknown but will be determined in the coming years. The U.S. EPA has classified the Bay Area a moderate nonattainment area for ozone, and as a maintenance area for carbon monoxide until at least 2008 (40 CFR 81.305).³ The California Air Resources Board (CARB) has given the Bay Area state-level nonattainment status for ozone and PM₁₀. A state-level standard also exists for the optical effects of visibility reducing particles.

Toxic air contaminants, which have the potential to cause cancer or could pose a present or potential hazard to human health, are also regulated through federal, state, and local programs. Unlike criteria pollutants, there are no regional ambient air quality standards for toxic air contaminants, primarily due to the localized nature of the adverse health impacts caused by toxic air contaminant emissions. Control of toxic air contaminants from mobile sources, including organic compounds, particulate matter from

diesel exhaust, and lead, is generally achieved through fuel efficiency or engine performance standards defined at the state or federal level. Stationary sources are regulated through locally managed permitting programs that restrict criteria and toxic contaminant emissions through emission control standards found in federal, state, and local rules.

Odors can affect air quality in densely developed areas where diverse land uses can either cause or be in close proximity to odor producers. While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public, and generate citizen complaints. Outside of developed areas, odors also play a natural role as an air quality-related value capable of transmitting aromatic information. Managing offensive odors is accomplished through Bay Area Air Quality Management District (BAAQMD) regulatory control (Regulation 7, Odorous Substances), and appropriate land use management to provide suitable buffer zones around odor sources.

AIR QUALITY MANAGEMENT PLANS

State Implementation Plan

The federal Clean Air Act, as amended, and the California Clean Air Act are the primary drivers for attaining and maintaining ambient air standards. The federal act contains conformity provisions that help to ensure that individual plans and projects throughout the region do not produce more emissions than are allowed by local air quality plans. These laws also provide the basis for implementing agencies to develop mobile and stationary source performance standards.

The BAAQMD is the primary agency responsible for managing compliance with the ambient air quality standards in the Bay Area. The BAAQMD's planning efforts to attain and maintain the standards are contained within two basic plans: the State Implementation Plan (SIP) and the Clean Air Plan (CAP) specify the means of maintaining the federal and state standards, respectively.

The federally required SIP was last revised in 1999 to respond to exceedances of the federal ozone standard during the mid- to late-1990s.⁴ The SIP is a

³ California Air Resources Board 1996.

⁴ Ozone Attainment Plan for the 1-Hour National Ozone Standard, ABAG, BAAQMD, and MTC, adopted June 1999.

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compilation of plans and regulations that govern how the region and state will comply with the federal Clean Air Act requirements to attain and maintain the ozone standard. Along with the BAAQMD, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) also contribute to the SIP.

Under Section 176(c) of the federal Clean Air Act, federal actions in nonattainment areas or maintenance areas must conform to applicable implementation plans approved under the Clean Air Act (e.g., the SIP). A formal conformity determination is required for federal actions when the total direct and indirect emissions of nonattainment pollutants from a proposed project exceed specified thresholds. For any federal action in the Bay Area causing more than 100 tons per year ROG, NO_x, or CO, the general conformity rule would apply (40 CFR 51.853). Federal actions causing emissions below these thresholds are presumed to conform with the SIP.

The Clean Air Act requires federal land managers to protect a park's air quality values from adverse impacts. Section 118 of the Clean Air Act requires that federal facilities comply with existing federal, state, and local air pollution control laws and regulations. Through environmental review, permit compliance, and contracting processes, the Trust ensures that activities within its administrative jurisdiction meet existing laws and regulations and that external sources of air pollution are controlled or mitigated to the extent possible to protect the air quality and resource values. Because the Presidio is part of the GGNRA, the area is designated as a Class II area within the federal Clean Air Act and amendments. When compared to a Class III designation, federal Class II designation provides additional protection by reducing the allowable increases in pollutant concentrations that may occur.

Bay Area Clean Air Plan

The Clean Air Plan is a state-level requirement of the California Clean Air Act. The SIP required by the federal Clean Air Act is partially based on control measures from the CAP. The BAAQMD's 2000 Clean Air Plan (adopted December 20, 2000) specifies the means by which the region will meet the state standard for ozone. This plan is updated and reevaluated

every three years. The state PM₁₀ standards are also exceeded in the region. However, no state plan is required to meet state PM₁₀ standards.

The CAP components for attaining the state ozone standards include transportation control measures (TCMs) that may be implemented by local jurisdictions. Additionally, the CAP recommends that local land use plans provide for buffer zones around uses that might be sources of toxic air contaminants or odors. The Trust has jurisdiction to manage land use and provides coordination for potential sources of toxic contaminants or odors. The Trust also manages transportation demand. In the effort to reduce transportation demand by Presidio tenants, residents, and visitors, the Trust developed and is implementing a Transportation Demand Management program that would implement the TCMs of the 2000 CAP. The relevant 2000 CAP TCMs are:

- TCM 1: Support Voluntary Employer-Based Trip Reduction Programs
- TCM 9: Improve Bicycle Access and Facilities
- TCM 12: Improve Arterial Traffic Management
- TCM 15: Local Clean Air Plans, Policies, and Programs
- TCM 17: Conduct Demonstration Projects
- TCM 19: Promote Pedestrian Travel
- TCM 20: Promote Traffic Calming Measures

San Francisco General Plan

Local environmental plans and policies also recognize community goals for air quality. The San Francisco General Plan (City and County of San Francisco n.d.) includes the 1997 Air Quality Element. Objectives include reducing traffic-related emissions, coordinating land use, and reducing road and construction-related dust. While not legally bound, it is the policy of the Trust to achieve consistency with the San Francisco General Plan by managing transportation demand, land use, and construction activities within the Presidio.

AIR QUALITY CONDITIONS AND MONITORING

The California Air Resources Board (ARB) compiles inventories and projections of emissions for the Bay Area. The projections show the planned reductions in emissions of ozone precursors expected to bring the area into attainment. Substantial reductions in CO emissions from 1996 to 2010 are

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attributed to the stringent emission controls that have been or will be imposed on motor vehicles and stationary sources. PM_{10} is forecast to increase, mostly due to the growth in motor vehicle travel in the Bay Area. SO_2 is also forecast to increase throughout the region.

The BAAQMD operates two air quality monitoring stations in San Francisco, one near Potrero Hill and one downtown. Both stations are downwind of the Presidio. Therefore, neither station would provide a representative indication of the superior air quality expected at the Presidio. No additional air quality monitoring is conducted within the GGNRA.

At the NPS Point Reyes North District Ranger Station, ozone data exists from November 1987 to December 1992 (NPS Air Resources Division, 2002), and parameters for aerosol and particulate mass are presently monitored (Interagency Monitoring of Protected Visual Environments Program, 2002). Ozone concentrations exceeded the state one-hour standard (90 ppb) during only one hour during 1988 through 1990, and the federal one-hour standard was not exceeded. Annual average concentrations of PM_{10} at Point Reyes are approximately one-half of the state standards (30 micrograms per cubic meter). Ambient air quality standards for ozone and PM_{10} are met at this location. Consistency with the state-level standard for visibility is unknown because optical data are not gathered at Point Reyes.

Violations of the state and federal standard for ozone persist further inland. However, in San Francisco, neither federal nor state ozone standards have recently been exceeded. Only state standards for PM_{10} have been recently exceeded. Pollutants from San Francisco tend to be carried into the more sheltered areas of the region and cause violations of the standards there. Therefore, the region will continue to benefit from further efforts to control emissions that originate in San Francisco.

Toxic air contaminants are monitored by a region-wide network of stations maintained by the BAAQMD. The results of the monitoring indicate that the health risks from ambient toxic air contaminants have been gradually

decreasing over the past ten years. In 1998, the region-wide ambient presence of toxic air contaminants resulted in an estimated average cancer risk of about 200 in one million, based on a lifetime exposure. This is down from approximately 350 in one million based on 1991 data (BAAQMD 1999).

LOCAL SOURCE INVENTORY

Traffic-related emissions of criteria pollutants are generated along the roadways throughout the Presidio including U.S. Highways 1 and 101. Traffic congestion in the Presidio or on the nearby roadways or intersections can occasionally result in localized elevated concentrations (hotspots) of carbon monoxide if heavy traffic coincides with stagnant weather conditions. Diesel trucks, buses, and other equipment, are sources of particulates in diesel exhaust, which are considered to be a toxic air contaminant. Other toxic air contaminants emitted in the Presidio include benzene from motor vehicles and small amounts of ammonia from soils or application of fertilizers.

Odors presently emitted include the odors of human activity (poorly maintained motor vehicles or landscaping equipment exhaust, decomposing landscaping trimmings, cooking food, or discarded waste) along with the natural aromas of vegetation, soils, and the sea.

Existing stationary sources at the Presidio are largely unused. These include equipment in the Letterman Planning District, which is currently not operational and is planned for demolition. The PHSH and other facilities at the Presidio include natural gas-fired boilers for heat and steam generation. These sources are exempt from BAAQMD permitting requirements and federal performance standards because each unit has a heat-input capacity of less than 10 million British thermal units per hour. Other small stationary sources that could be present at the Presidio are also below the thresholds for requiring permits.

3.3.5 NOISE

NOISE TERMINOLOGY

Sound levels are the audible intensities of air pressure vibrations and are most often measured with the logarithmic decibel scale (dB). To consider the human response to the pitch and loudness of a given sound in the context of environmental noise, the A-weighted frequency-dependent scale (dBA) is usually employed. The equivalent energy indicator, L_{eq} , is an average of noise over a stated time period, usually one-hour. The day-night average, L_{dn} , is a 24-hour average, which accounts for the greater sensitivity of most people to nighttime noise. The sound level that is exceeded ten percent of the time is known as L_{10} . Generally, a 3 dB difference at any time is noticeable to most people and a difference of 10 dB is perceived as a doubling of loudness.

NOISE CONTROL REGULATIONS AND PROGRAMS

The Trust requires all facilities to be managed, operated, and maintained to minimize noise pollution in the Presidio by complying with the following standards.

Traffic Noise

Federal management of highway noise can be found in Federal Highway Administration (FHWA) regulations (23 CFR 772). Federal or federally-aided highway projects and construction of highway projects, must conform with the FHWA noise standards. The FHWA Noise Abatement Criteria (NAC), which aims to protect noise-sensitive land uses from highway noise, is summarized in Table 7. The FHWA procedures state that noise impacts from traffic are serious enough to warrant consideration of abatement when noise levels for the project approach or exceed the Noise Abatement Criteria or when they substantially exceed existing noise levels. FHWA regulations do not include specific criteria for noise caused by construction or demolition activities.

Table 7: FHWA Noise Abatement Criteria (Hourly dBA)

Activity Category		$L_{eq}(h)$	$L_{10}(h)$
A	Lands on which serenity and quiet are of extraordinary significance and serve as important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (Exterior)	60 (Exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (Exterior)	70 (Exterior)
C	Developed lands, properties, or activities not included in Categories A or B above.	72 (Exterior)	75 (Exterior)
D	Undeveloped lands.	None Applicable	None Applicable
E	Residences, motels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (Interior)	55 (Interior)

Source: 23 Code of Federal Regulations, Part 772, Table 1.

Notes: Either L_{eq} or L_{10} (but not both) may be used on a project.

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General Construction/Demolition Noise

Local noise control for the urban neighborhoods surrounding the Presidio is the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1994). The noise ordinance regulates construction noise, fixed-source noise, and unnecessary, excessive, or offensive noise disturbances within the city. The construction noise regulations in Sections 2907 and 2908 of the San Francisco Police Code provide that:

- Construction noise is limited to 80 dBA at 100 feet (ft.) from the equipment during daytime hours (7 a.m. to 8 p.m.). Impact tools are exempt provided that they are equipped with intake and exhaust mufflers.
- Nighttime construction (8 p.m. to 7 a.m.) that would increase ambient noise levels by 5 dBA or more is prohibited unless a permit is granted by the Director of Public Works.

The Trust is committed to complying with provisions equivalent to the standards in the San Francisco Noise Ordinance.

Interior Noise

Noise standards for interior spaces are included in Title 24 of the California Code of Regulations (California Noise Insulation Standards, California State Building Code [Part 2, Title 24, CCR], 1995). These standards would govern interior noise levels and apply to all new (permitted after 1974) multifamily residential units (hotels, motels, apartments, condominiums, and other attached dwellings). These standards would also require that acoustical studies be performed prior to construction at residential building locations where the existing exterior L_{dn} exceeds 60 dBA. Such acoustical studies would be required to establish a design that will limit maximum L_{dn} noise levels to 45 dBA in any habitable room. As part of the Trust compliance process, the Trust would enforce the noise insulation requirements equivalent to the standards of Title 24 with building permit conditions.

EXISTING NOISE CONDITIONS

Traffic on the roadways of the Presidio is the major source of environmental noise. Away from roadways, the Presidio is generally quieter than the surrounding urban environment of San Francisco because natural noise sources dominate and there is less urban activity. Other non-traffic noise is caused by human activity (primarily recreational), occasional aircraft overflights, and use of mechanical equipment for building operations (e.g., ventilation systems) or landscaping.

The results of recent noise monitoring are summarized in Table 8. In the vicinity of State Highway 1, and U.S. Highway 101 (including Doyle Drive and Richardson Avenue), existing traffic noise levels are commonly above 67 dBA, the FHWA Noise Abatement Criterion for recreation areas, parks, and residences. Additionally, noise levels above 67 dBA can occasionally occur adjacent to some of the internal roadways of the Presidio and near the entry gates; this noise can be exacerbated by buses accessing the Presidio (Bowlby and Associates 1998). Peak noise levels above 85 dBA were observed outside City residences adjacent to accelerating San Francisco Muni buses leaving Presidio gates. Away from traffic noise and noise from other human activity, the natural environment provides noise levels commonly below 60 dBA.

NOISE-SENSITIVE AREAS

Natural sounds are intrinsic elements of the environment that are often associated with parks and park purposes. They are inherent components of "the Presidio's significant natural, historic, scenic, cultural and recreational resources" protected under the Trust Act. They are vital to the natural functioning of areas within the Presidio and may provide valuable indicators of the health of various ecosystems. Examples of areas within the park where quiet is of significance include Crissy Marsh, Tennessee Hollow, El Polin Spring, Inspiration Point, Mountain Lake, and Lobos Creek. The natural soundscapes of these areas include the sound of running water, waves crashing, and birds singing. Intrusive sounds are of concern because they could impede the Trust's (or in the case of Crissy Marsh, NPS's) ability to manage and protect these resources. Intrusive sounds are also a matter of concern to park visitors. Noise can also distract visitors from the resources and purposes of cultural areas, i.e., the tranquility of historic settings and the solemnity of monuments. Examples

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of these areas within the Presidio include the Fort Scott parade ground, San Francisco National Cemetery, and the World War II Memorial.

Examples of other resources that need to be protected (known as sensitive uses or sensitive receptors) include residences, schools, day care centers, parks, hospitals, convalescent centers, and recreational facilities. Existing and planned noise-sensitive uses would include:

- recreational users at the Presidio;
- residences within the City of San Francisco and within the Presidio; and
- lodging, day care, or senior-living uses that may be associated with some of the proposed development alternatives.

The current mix of land uses at the Presidio includes recreational opportunities throughout. Recreational users in some highly developed areas of the Presidio would not be considered noise-sensitive. For example, recreational users in the Letterman Planning District are generally people using the YMCA facilities and/or tennis courts, and they would not be considered noise-sensitive, because the facilities are either indoors or are located in a built environment typical of the urban commercial/residential mixed use areas in San Francisco. Locations of existing noise-sensitive areas in Area B are depicted on Figure 25.

Table 8: Summary Of Short-Term Noise Measurements

Site	Description	Time	Dominating Noise Source	Hourly L_{eq} (dBA)	Hourly L_{10} (dBA)
R1	Lyon Street at Francisco and Richardson	11:10 a.m.	Richardson/Highway 101	69.4	72.5
R2	3030 Lyon Street (Lombard Street Gate)	11:45 a.m.	Lyon Street	60.5	64.0
R3	Presidio Boulevard at #545	12:25 p.m.	Buses Accelerating	67.9	69.1
R4	Gorgas at Sternberg (LDA)	12:55 p.m.	Shielded from Richardson	61.4	63.9
R5	Marina Boulevard Gate at Lyon Street	12:55 p.m.	Marina Boulevard	71.5	75.6
R6	Presidio Boulevard Gate at Pacific Street	7:10 a.m.	Presidio Gate Traffic	78.5*	69.2*
R7	Arguello Boulevard Gate at Jackson Street	7:45 a.m.	Arguello Gate Traffic	63.3	65.7
R8	El Camino del Mar (Lincoln Gate)	8:25 a.m.	Lincoln Gate Traffic	66.2	69.2
R9	Pershing at #1502	1:30 p.m.	Lincoln Boulevard	60.8	63.5
R10	Public Health Service Hospital at #1810	9:05 a.m.	Park Presidio	59.6	61.4
R11	Kobbe at #1304	9:40 a.m.	Elevated Highway 1	63.1	64.9
R12	Storey at #1290 Backyard	10:10 a.m.	Highway 101/1	68.0	69.6
R13	Armistead at #1253	10:35 a.m.	Highway 101	65.1	66.3
R14	Doyle Drive at #106 (Main Post)	11:10 a.m.	Doyle/Highway 101	72.1	73.8
R15	Moraga at #50 (Officer's Club)	11:55 a.m.	Main Post Activity	59.9	64.0

Source: EIP Associates, *Short-Term Ambient Noise Measurements*, 1999 and 2001.

Notes: * Includes passby of emergency vehicles with sirens.

Tests were duration of 15 to 30 minutes, taken on February 23, 1999 and February 2, 2001.

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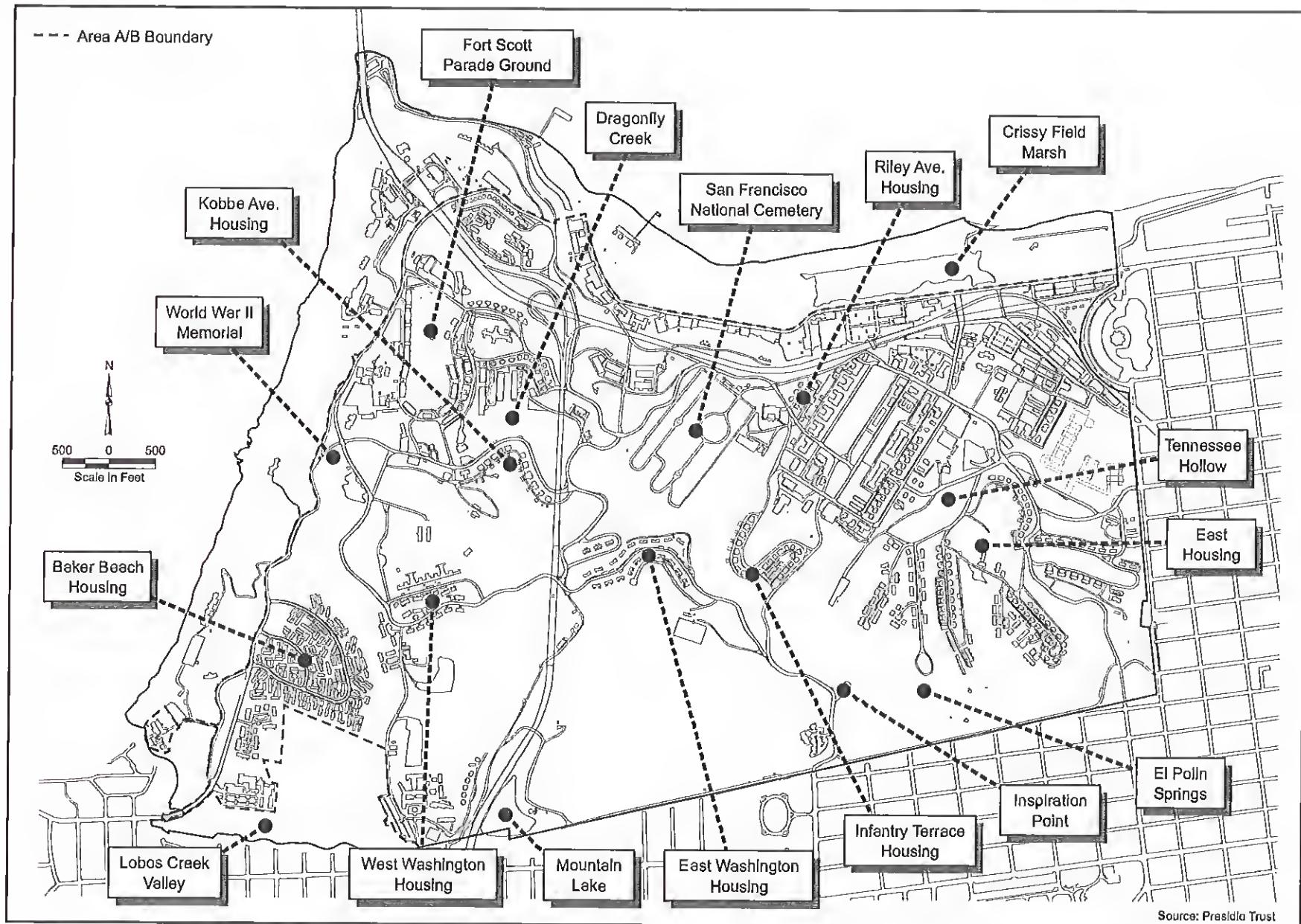


Figure 25: Sensitive Noise Areas

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3.4 THE COMMUNITY

Community resources of the Presidio include land use, socioeconomic conditions, including population, employment and housing, schools, visitor facilities, recreation, and public safety, including fire protection and park police. The Community

Affected Environment section discusses the existing conditions for these issue areas at the Presidio, surrounding neighborhoods, and the Bay Area region.

3.4.1 LAND USE

The following section is an update of the discussion of Presidio land uses and adjacent communities provided in the GMPA EIS.

The 1,490-acre Presidio is at the northern tip of the San Francisco peninsula on the Golden Gate at the point where the San Francisco Bay empties into the Pacific Ocean. The Presidio is bounded by these bodies of water on two sides. South of the Golden Gate Bridge, the Presidio is part of the GGNRA's more than 70,000 acres. The densely developed City and County of San Francisco borders the former military post on the south and east. The Presidio, together with Golden Gate Park and Lincoln Park, includes most of the remaining open space within the city (most other areas are highly developed for commerce, residences, and entertainment). For the residents of San Francisco and the 7 million inhabitants of the nine Bay Area counties, the Presidio is both a forested refuge and a cultural landmark amid a densely urbanized setting. Overall, the park's existing land use pattern is mostly suburban, and less intense than the neighboring areas of San Francisco. However, the pattern is diverse, comprised of seven distinct planning districts (Area B) with a range of uses and development character (Figure 26A).

The Trust manages a majority of the Presidio's land area. The Trust's area of responsibility includes the interior approximately 80 percent of the park (1,168 acres). NPS manages Area A, the coastal area of the Presidio (323 acres), and also provides public safety (by contract to the Trust) and interpretive functions throughout the Presidio. Figure 26A illustrates Areas A and B.

MAJOR LAND USES AND BUILDING USES

Planning Districts

There are seven planning districts within Area B of the Presidio: Main Post, Crissy Field (Area B), Letterman, Fort Scott, Public Health Service Hospital, East Housing, and South Hills. These districts are derived from the 13 planning areas delineated in the 1994 GMPA and have been refined to reflect the Presidio Trust Management Plan's focus on Area B. District boundaries are based on each area's historic uses; jurisdictional boundaries; human-made features such as roads, fences, and walls; and natural features and demarcations, including topography and vegetation. A brief description of past land uses and how these uses shaped the character of these planning districts is provided below.

Main Post

In 1776, early Spanish explorers chose the gently sloping land in front of what is now the Officers' Club as the site for a new presidio, or garrison, for their northern frontier. Since that time, the Main Post has undergone continuous expansion and redevelopment over its 225-year history as the administrative center of the Presidio. A range of architectural styles and formal landscapes illustrate the complex layering of construction over time, creating an apt setting for telling many of the Presidio's stories. Today, 138 buildings (110 historic and 28 non-historic) accommodate administrative, community, and residential uses as well as support services.

Crissy Field (Area B)

Originally an ecologically rich stretch of coastal marsh, the Crissy Field (Area B) planning district has been dramatically reconfigured by years of use. In 1921, when an airfield was established on the site, Crissy Field was the first and only Army Air Service coast defense station on the West Coast. Military use of Crissy Field continued through the 1970s.

The Crissy Field (Area B) planning district south of Mason Street contains about 40 buildings, including the crescent of former airplane hangars and airfield support buildings at the west end, historic warehouses at the east, and

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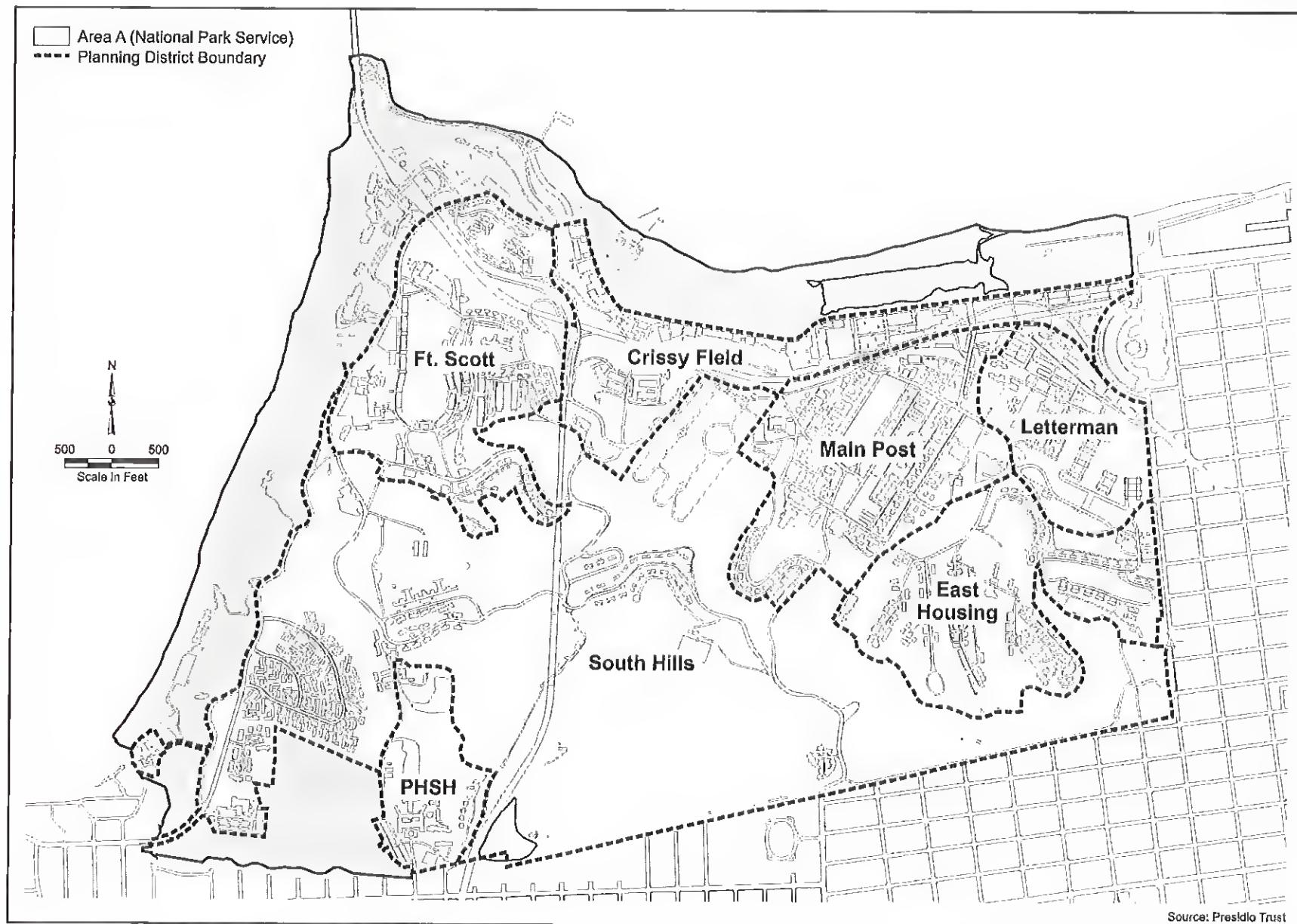


Figure 26a: Planning Districts (Area B)

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the Commissary and PX in the center. The former Cavalry Stables, constructed in 1914 to support Army cavalry troops, lie south of the historic airfield in a small forested valley facing the bay. Area A of Crissy Field, managed by the National Park Service, is largely open space that encompasses the historic airfield (newly restored as open space), an 18-acre tidal marsh, wetland, beach and dunes, a shoreline promenade, meandering trails, and dedicated bike lanes along Mason Street. The Area A section of Crissy Field has become a popular bayfront park for recreational activities. Both Areas A and B of Crissy Field contain known prehistoric sites, and the potential for finding additional prehistoric and historic sites is high.

Some of the district's natural values, such as the marsh and bay views, are obvious; others are more subtle, taking the form of hidden remnant wetlands and rare serpentine habitats. Important natural vegetation in the planning district includes the most intact and diverse fore dune community in San Francisco. Remnant seeps, creeks, and wetlands are found in the Cavalry Stables area and on the cliffs adjacent to Doyle Drive. The planning district also contains remnants of Tennessee Hollow, once linked to the former Crissy Marsh; today, its waters reach the bay through storm drains.

Letterman District

Situated at the main entrance to the Presidio, the Letterman district is the site of the former Letterman Hospital, which was established in 1898 and provided medical services to soldiers for almost a century. The original hospital complex, which included hospital wards, clinics, offices, warehouses, and ancillary buildings, has been significantly altered over time. Remnant historic buildings and an orthogonal street layout create the district's distinct urban character. Most of the surviving historic buildings and cultural landscape features are in the western part of the district. The eastern portion of the district contains the 23-acre site of the future Letterman Digital Arts Center. The main entrance to the Presidio, the historic Lombard Gate, is located just east of the 23-acre site. The remnant Tennessee Hollow stream forms the western edge of the district.

Public Health Service Hospital District

The Public Health Service Hospital (PHSH) district is situated on a gentle north-south ridge at the Presidio's southern boundary, overlooking the city and remote from other developed areas of the Presidio. The PHSH evolved as a separate entity, first under the administration of the U.S. Marine Hospital Service and then under the U.S. Public Health Service. The site, originally selected for development in the 1870s because of its proximity to Lobos Creek and Mountain Lake, has been developed into two plateaus, with most of the existing development located on the lower plateau. The district contains 19 buildings, including the former U.S. Marine Hospital and its support buildings. The historic main hospital building was built in 1932 and expanded in 1952 with a seven-story addition on the south side of the original building. The hospital closed in 1980.

The upper plateau behind the hospital supports unique and ecologically significant native plant communities that include coast live oak woodland, central dune scrub, and riparian and dune slack wetland vegetation, as well as the San Francisco lessingia (*Lessingia germanorum*), a federally-listed endangered plant. The complex array of vegetation also provides valuable habitat for the largest known quail population in San Francisco, as well as other bird species. The potential for historic archeological resources is high in this area. The old Marine Cemetery, a significant archeological resource, dates back to the 1880s.

East Housing District

The East Housing district, one of the oldest residential areas in the Presidio, offers distinctive clusters of historic housing along winding roads that follow ridge lines and provide breathtaking views of San Francisco Bay. The district also contains clusters of non-historic housing, typically sited on filled-in streams and valley bottoms. Recreation fields and playgrounds such as the Paul Goode Field and the city-operated Julius Kahn Playground are found along the district's southern edge. Presidio residents, as well as city neighbors, have traditionally used these facilities and continue to do so today.

Three tributaries feed from the watershed of the Tennessee Hollow creek system, a partially surviving natural system that still supports remnant native

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The Community

plant communities and aquatic ecological resources. The natural springs that surface at the headwaters of the Tennessee Hollow creek system have a long history of human use. Tennessee Hollow was the site of a temporary encampment at the turn of the 19th century and a staging area for the Panama Pacific International Exposition. El Polin Spring, one of the earliest water supplies in the area, was near the historic trail between the Spanish Presidio and the Mission de Francisco de Assisi.

South Hills District

The South Hills district covers over 50 percent of Area B, extending across the park's highest elevations from the Presidio Gate to the east to the World War II Memorial overlooking the Pacific Ocean to the west. The district is made up of several distinctive landscapes covering the southern half of the Presidio, including the 100-year old Presidio forest, Mountain Lake, the 160-acre Presidio Golf Course, the popular Julius Kahn Playground, and the 33-acre historic San Francisco National Cemetery, managed by the Veterans Administration. Vestiges of the San Francisco's natural heritage are best seen in this part of the Presidio. Remnant native habitats have survived the dramatic landscape transformations of the last two centuries. Diverse habitats, including majestic oak woodlands, forest canopies, and open grassy knolls, sustain native bird species found nowhere else in San Francisco. The district also harbors rare and endangered plant species, including the endangered San Francisco lessingia, found in only two places on earth, and the last remaining wild Raven's manzanita in the world.

The district also contains three isolated non-historic housing complexes set in sparsely vegetated portions of the Presidio forest. They consist of two large neighborhoods along Washington Boulevard, and the Wherry Housing complex (Baker Beach Apartments). Together, these residential areas contain 587 dwelling units.

Within Area B, approximately 473 acres, or 40 percent, are developed and 695 acres, or 60 percent, are open space. Of the developed areas, about 168 acres (36 percent) are used for residential purposes, and about 138 acres (29 percent) are in office and mixed use. Institutional and visitor with mixed use occupy about 103 acres (22 percent), and highway rights-of-way and other infrastructure encompass about 64 acres, (13 percent). Open space includes

native plant communities, forests, landscape vegetation and natural yet disturbed areas. It also includes areas for recreation including baseball fields, multi-use fields and the Presidio Golf Course.

The total built space within Area B is 5.96 million gross square feet (gsf), of which 3.5 million gsf, (59 percent) are non-residential building area and 2.4 million gsf (41 percent) are residential building area. Within Area B there are 730 buildings, of which 432 (59 percent) are historic and 298 (41 percent) are non-historic. Historic structures and the cultural landscape are discussed in the Cultural Resources section. Since 1994, when the Army departed the Presidio, many of the Presidio's buildings have remained unoccupied or have had short-term occupancies.

Presently, approximately one-third of the buildings is occupied as shown in Table 9. Of the currently occupied building space, office and residential uses together make up about 80 percent of the existing uses. Office uses include non-profit organizations, foundations, and for-profit entities, and are located primarily in the Main Post and Letterman Planning Districts. Some retail, office, conference, industrial, and warehouse uses have also continued in formerly occupied military buildings or in buildings that have been converted for these uses. Current leasing agreements in the Presidio include short-term leases (1 to 5 years) to long-term ground leases (up to 55 years); see Table 10 for a listing of buildings under long-term leases.

Residential uses continue in quarters and barracks constructed for military use, and include former single- and multi family residences. Today, there are 1,116 conventional dwelling units in 21 neighborhoods throughout the park. Approximately 300 units in the Presidio were built before World War II, and most of these are single-family or duplex units. Of the 1,116 housing units, 302 units are historic housing and 814 are non-historic housing. The remaining units are multi-family apartments built after the war. In addition, there are 538 "group quarters" (single room occupancy/dorm rooms in former barracks, dorms, or bachelor officers quarters) located in 19 buildings in the Main Post, Letterman, and Fort Scott Planning Districts. See Section 3.4.2 for more information on Presidio housing.

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Table 9: Current Building Use[†]

Building Use	Square Feet
Industrial/Warehouse/Infrastructure	380,000
Office	770,000
Retail	160,000
Lodging/Conference	20,000
Recreational	80,000
Cultural	40,000
Educational	40,000
Residential	1,800,000
Military	70,000
Total Square Footage	3,370,000
Unoccupied Space	2,590,000

[†]Unoccupied space as of November 2000

All figures are rounded

Table 10: Long-Term Non-Residential Leases and Committed Space (a)

Building	Tenant	Building Area (sf)
106	Arnold Palmer Golf Management Company (National Office)	7,098
300, 315-319, 322-324, 346,	Arnold Palmer Golf Management Company (Presidio Golf Course)	NA
358		
1187, 1188	Exploratorium	26,960
385	Fort Mason Foundation Exhibit Center	10,585
603	Golden Gate National Parks Association (GGNPA) Crissy Field Education Center	
135	Golden Gate National Parks Association (GGNPA)	25,776
130	Interfaith Center	7,160
116	Internet Archives	2,970
	Letterman Digital Arts Ground Lease	Approx. 900,000
210	Post Office	2,700
63, 1151, 1152	Presidio Community YMCA	46,821
38	Presidio Internet Center Partners	61,573
39	S.F. Film Centre	55,310
387	S.F. Unified School District (Child Care Center)	19,170
1029, 1030	Swords to Plowshares	46,000
1012, 1013, 1014, 1016	Thoreau Center I	73,200
1000-4, 1007-9	Thoreau Center II	84,768
Total		481,892

(a) Leases Greater than 5 Years

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The use designations shown in Figure 26B reflect current uses for occupied building clusters and, for vacant buildings, the most recent use or function that occurred there.

SURROUNDING LAND USE

San Francisco Neighborhoods

The Presidio is bordered to the south and east by the City of San Francisco. The Richmond district is south of the Presidio, Presidio Heights and Pacific Heights are to the southeast, and the Marina district is to the east. The neighborhoods surrounding the Presidio are primarily residential with neighborhood commercial districts dispersed throughout (see Figure 27).

The Richmond district, south of the South Hills Planning District, includes the Seacliff, Lake, Presidio Heights, and Jordan Heights/Laurel Heights neighborhoods. The Seacliff and Presidio Heights neighborhoods are defined by large, single-family detached homes, with some larger multi-unit buildings in Presidio Heights. The majority of the other residential uses adjacent to the Presidio in the Richmond district are single-family homes, single-family homes with second units, and two-family homes. Three-family homes and residential mixed-use districts exist a few blocks farther south. The Richmond district also includes neighborhood commercial land uses in the vicinity of the Presidio generally along Sacramento Street, California Street, Clement Street, and Geary Boulevard.

The Pacific Heights district is southeast of the Presidio, east of the East Housing Planning District, and east and south of the South Hills Planning District. It is similar to the Seacliff and Presidio Heights neighborhoods in that it is comprised of large single-family detached homes. Areas of one-family homes, two-family homes and larger multiplexes surround the detached homes. The Pacific Heights district also includes neighborhood commercial districts in the vicinity of the Presidio generally along Divisadero Street, and Fillmore Street.

The Marina district is east of the Presidio, east of the Main Post, Crissy Field, and Letterman Planning Districts. In the vicinity of the Presidio, it is a combination of single-family homes, two-family homes and three-family

homes. Residential mixed-use districts exist a few blocks farther east. The Marina district also includes neighborhood commercial land uses in the vicinity of the Presidio generally along Chestnut Street, Lombard Street, and Union Street.

Area A

Area A of the Presidio is under the jurisdiction of the NPS, and is comprised of approximately 323 acres of largely ocean- and bayside property, with a limited amount of building space and facilities. Area A includes popular visitor sites such as Baker Beach, the coastal bluffs, Fort Point National Historic Site, the Golden Gate Bridge plaza, Crissy Field (north of Mason Street), as well as Lobos Creek and Lobos Dunes. In addition, areas of native plant communities and sensitive plant occurrences are located in Area A.

APPROVED PLANS

Presidio General Management Plan Amendment (GMPA)

The GMPA, an amendment to the 1980 General Management Plan for the Golden Gate National Recreation Area, set forth concepts for managing the Presidio's resources. It also laid out site concepts, land use plans, and building treatments for 13 distinct planning districts. It called for 348 historic buildings to be rehabilitated for new uses, and 276 buildings totaling 1.5 million square feet to be removed. Some new construction was also specified. The GMPA envisioned both public and private organizations establishing a mix of uses at the Presidio, with an emphasis on organizations with missions related to environmental, social, and cultural issues. The GMPA also recognized the need for a new management structure to oversee building leasing, operation, and maintenance, and to work cooperatively with the NPS. The proposed project would update the GMPA to guide the overall management of Area B of the park in keeping with the Trust's legislative purpose and legal and administrative mandates.

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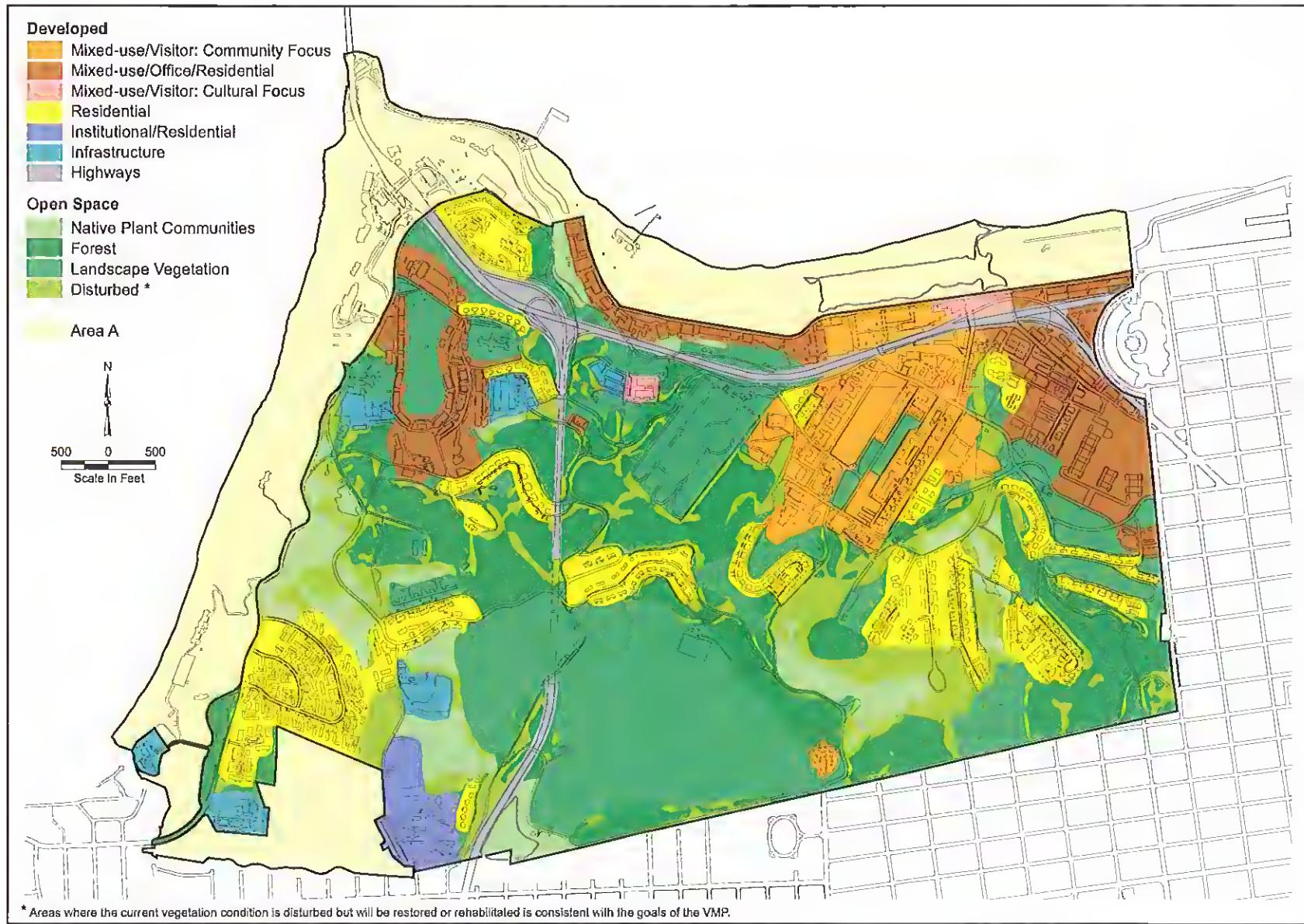


Figure 26b: Current Land Use

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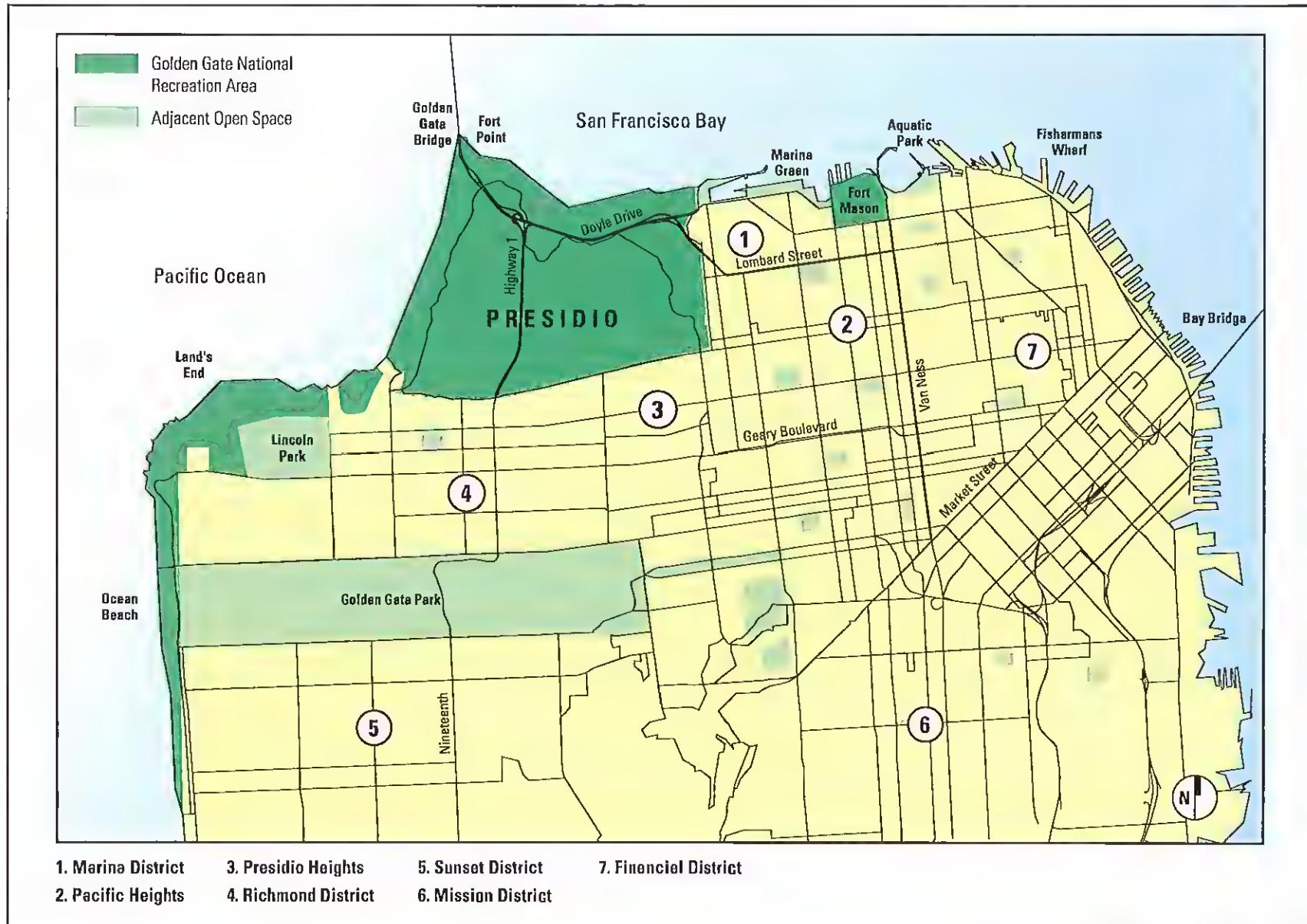


Figure 27: Urban Context Map

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City and County of San Francisco General Plan

The Presidio is under exclusive federal jurisdiction; therefore it is not directly subject to state and local land use plans, policies, or regulations. The Trust seeks to minimize possible conflicts between Trust activities and City policies, and consults with the City to achieve consistency wherever possible. Lacking any jurisdiction, the City has not developed any site-specific plans for the Presidio property. The *San Francisco General Plan* (City and County of San Francisco, n.d.) contains general land use policies and objectives for San Francisco, including housing, transportation, commercial, and recreation and open space policies. Specifically relative to the Presidio, Policy 5 of the Recreation and Open Space element calls for the preservation of the open space and natural, historic, scenic, and recreational features of the Presidio. Generally, the plan supports the preservation of San Francisco's relatively dense mixed-use neighborhoods. There is an emphasis on public transit and pedestrian use rather than on the automobile.

San Francisco Bay Plan

As the coastal management agency for the San Francisco Bay, the BCDC is responsible for ensuring that activities that occur within the coastal zone are consistent with the coastal zone management program for San Francisco Bay. The BCDC's jurisdiction in shoreline areas, as defined in the McAteer-Petris Act, is limited to a band measured 100 feet landward of and parallel to the shoreline of the Bay. Although the Trust is not legally subject to the jurisdiction of the BCDC, it is Trust policy to conform generally to state laws and plans if they do not unduly interfere with federal objectives or purposes. The Bay Plan establishes policies to guide development in and around San Francisco Bay. The Bay Plan designates the Presidio as a park priority use area and states that the shoreline and the undeveloped areas in the Presidio should be retained as a regional park. The PTMP alternatives, if implemented, would support the Bay Plan by increasing open space and recreational opportunities, preserving historic resources, rehabilitating native vegetation and riparian areas, preserving and enhancing Bay views, protecting water quality, establishing a network of trails and bikeways

through the Presidio and encouraging public transportation demand management strategies.

3.4.2 SOCIOECONOMIC ISSUES/HOUSING SUPPLY

POPULATION

This section describes the population and household characteristics of the San Francisco Bay Area, the City and County of San Francisco, and the Housing Impact Area associated with the PTMP. Existing conditions and projections are discussed, setting a foundation for the analysis of the PTMP socioeconomic impacts in subsequent sections.

Bay Area

The Presidio is located at the northwestern point of the City and County of San Francisco, the center of the San Francisco Bay Area. As the fifth largest metropolitan area in the United States, the Bay Area is a major population, economic, and financial center, and includes nine counties with a total population of 6.9 million according to the Association of Bay Area Governments (ABAG). This population comprises approximately one-fifth of California's 34 million residents. The Bay Area includes the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. While some definitions of the Bay Area add Santa Cruz as a tenth county, this analysis adheres to a nine-county definition as set forth by ABAG. As shown in Table 11, the Bay Area has experienced significant population growth over the last decade, increasing by 15 percent between 1990 and 2000. Over the next 20 years, ABAG projects the region to grow to over 8 million people, an approximately 16 percent increase over the current population. Population projections are summarized in Table 12.

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Table 11: Population and Household Trends

	1990	2000	Total Percent Change 1990-2000	Average Annual Change 1990-2000
San Francisco				
Population (a)	723,959	799,000	10.4%	1.0%
Households	305,584	315,550	3.3%	0.3%
Average Household Size	2.29	2.46	—	0.7%
Household Type (b)				
Families	46%	45%	—	-0.3%
Non-Families	54%	55%	—	0.2%
Tenure (c)				
Owner	35%	N/A	—	—
Renter	65%	N/A	—	—
Bay Area				
Population (a)	6,020,147	6,930,600	15.1%	1.4%
Households	2,245,865	2,438,060	8.6%	0.8%
Average Household Size	2.61	2.78	—	0.6%
Household Type (b)				
Families	65%	72%	—	1.0%
Non-Families	35%	28%	—	-2.2%
Tenure (c)				
Owner	60%	N/A	—	—
Renter	40%	N/A	—	—

Sources: Association of Bay Area Governments, *Projections 2000*; Claritas, Inc.; 1990 U.S. census; Bay Area Economics, 2000.

Notes:

- (a) Population, Households, Average Household Size from ABAG, *Projections 2000*.
- (b) Data from Claritas, Inc.
- (c) Data from 1990 U.S. census.

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Table 12: Population and Household Projections

	2000	2005	2010	2015	2020	Percent Change 2000-2020
Population						
San Francisco	799,000	815,600	818,800	812,900	808,800	1.2%
Bay Area	6,930,600	7,380,100	7,631,400	7,832,600	8,026,900	15.8%
Households						
San Francisco	315,550	321,710	326,130	329,080	331,470	5.0%
Bay Area	2,438,060	2,553,930	2,656,650	2,753,440	2,839,630	16.5%

Sources: Association of Bay Area Governments, *Projections 2000*; Bay Area Economics, 2000.

San Francisco

ABAG reports that the City and County of San Francisco has 799,000 residents, making it the fourth largest county in the Bay Area. While San Francisco has grown over the last decade, it has expanded at a significantly slower pace than the rest of the region, largely due to a lack of available land. As shown in Table 11, San Francisco grew at an average annual rate of 1 percent between 1990 and 2000. In contrast, the Bay Area grew at an average annual rate of 1.4 percent. As shown in Table 12, ABAG expects this trend to continue over the next 20 years, only forecasting 1 percent total growth for San Francisco between 2000 and 2020 while the Bay Area is projected to grow by 16 percent over the same period.

Table 11 also presents household data for San Francisco and the region. In general, San Francisco households are smaller than Bay Area-wide households. San Francisco's average household size is 2.46 persons per household, compared to a regional average household size of 2.78. San Francisco's higher density, smaller dwelling units, and greater proportion of non-traditional households contribute to this difference.

Tables 13 and 14 show that San Francisco households also tend to be less affluent than Bay Area-wide households. San Francisco's mean household income is \$68,600, while the Bay Area has a mean household income of

\$76,400 (in 1995 dollars). San Francisco's lower mean income is accounted for by larger proportions of lower-income households, as indicated in Table 14. ABAG forecasts show that this pattern will continue over the next two decades. In 2020, Bay Area households are projected to have a mean income of \$94,200, while San Francisco households are projected to have a mean income of \$86,400 (in 1995 dollars). However, San Francisco's mean household income has grown at a slightly greater pace than the region's. The city's mean household income grew by 21 percent over the last decade, while the regional figure grew by only 19 percent.

Table 13: Mean Household Income Trends

	1990 (a)	2000	2020	% Change '90-'00	% Change '00-'20
San Francisco	\$56,600	\$68,600	\$86,400	21%	26%
Bay Area	\$64,100	\$76,400	\$94,200	19%	23%

Sources: Association of Bay Area Governments, *Projections 2000*; Bay Area Economics, 2000.

Note:

(a) All income amounts are expressed in 1995 dollars as calculated by ABAG.

San Francisco households are generally older than regional households. Table 15 shows that San Francisco's median age is 39.8 years and the Bay Area

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median is 36.9 years. Both reported figures are higher than the state median age of 34.6 years.

Table 14: Household Income Distribution (Year 2000)

2000 Income	San Francisco		Bay Area	
	Number	% of Total	Number	% of Total
Less than \$15,000	42,668	13.1%	239,991	9.4%
\$15,000 to \$24,999	32,595	10.0%	213,442	8.4%
\$25,000 to \$34,999	30,667	9.4%	218,359	8.6%
\$35,000 to \$44,999	32,091	9.9%	228,318	8.9%
\$45,000 to \$49,999	12,312	3.8%	103,438	4.1%
\$50,000 to \$59,999	28,128	8.7%	220,959	8.7%
\$60,000 to \$74,999	35,404	10.9%	302,996	11.9%
\$75,000 to \$99,999	42,078	13.0%	375,581	14.7%
\$100,000 to \$149,999	34,999	10.8%	350,309	13.7%
\$150,000 to \$249,999	24,142	7.4%	224,158	8.8%
\$250,000 to \$499,999	6,405	2.0%	52,995	2.1%
\$500,000 or More	3,191	1.0%	22,328	0.9%
Total (a)	324,680	100.0%	2,552,874	100.0%
Median income	\$53,630		\$62,571	

Sources: Claritas, Inc.; Bay Area Economics, 2000.

Notes:

(a) Total number of households differs from Table 12, Population and Household Trends, due to different data sources.

Table 15: Median Age 1990 and 2000

	1990	2000
San Francisco	35.6	39.8
Bay Area	33.4	36.9
California	31.3	34.6

Source: Claritas, Inc.; Bay Area Economics, 2000.

Presidio Population

The Presidio currently has a resident population of approximately 2,250 residents. For historical comparison, in 1990 during the Army's occupation there were approximately 4,700 people living at the Presidio. Based on the results of a 1999 survey of existing Presidio-based employees, Presidio households have an average of 2.7 residents and a median household income of \$58,465.

Among the existing Presidio population, military families occupy 57 residential units. At the time that the GMPA was adopted, the U.S. Sixth Army was expected to use approximately 550 to 600 housing units for an indefinite time period. The U.S. Sixth Army has since departed the Presidio.

HOUSING IMPACT AREA

Bay Area housing markets do not conform uniformly to geographic and jurisdictional boundaries. Therefore, an analysis of housing market conditions and the housing impact of PTMP requires a distinct study area. The Housing Impact Area is the area in which most employees working at the Presidio are expected to reside. This Area is also expected to contain the households created by future employment at the Presidio. Methodology for identifying the Housing Impact Area (HIA) is presented below.

Defining the Housing Impact Area

Two main data sources were used in defining the HIA. First, zip code data from a 1999 survey of major Presidio employers were examined to determine the residential patterns of current Presidio employees. The sample represents 983 individuals, approximately 51 percent of the Presidio Area B total employment in 1999.

The second data source was the Metropolitan Transportation Commission's (MTC) *Commuter Forecasts for the San Francisco Bay Area 1990-2020*, which organizes commute data into "superdistricts." The HIA analysis uses commuters to Superdistrict 2 – the Richmond district Superdistrict – as a proxy for Presidio employees. Commute patterns for 2020 were used to

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reflect the anticipated build-out date for the Presidio. The complete MTC data set is contained in Appendix E, Socioeconomic/Housing Supply.

By cross-referencing the survey data and superdistrict data, a preliminary Housing Impact Area was drawn. As a general rule, superdistricts that generated over 1 percent of current commuters to the Presidio were included in the HIA, although some superdistricts with smaller shares of total commuters were also incorporated due to their geographic proximity to the Presidio.

The final HIA is shown in Table 16.

Housing Impact Area Characteristics

The HIA population characteristics are summarized in Table 17. According to MTC, the HIA had 3.4 million persons in 2000, and is projected to increase by 11 percent to 3.8 million persons by 2020. The number of households is projected to grow by 11 percent, from 1.2 million to 1.4 million between 2000 and 2020. The average household size is expected to rise from 2.66 to 2.69 in 2010, and fall once more to 2.66 in 2020. Over the same period, the mean household income is projected to rise from \$57,618 to \$71,162 (in constant 1989 dollars as calculated by MTC).

EMPLOYMENT

Bay Area

The Bay Area regional economy is one of the most dynamic and innovative economies in the world. In addition to being a leading center of knowledge-based industries (e.g., information technology, high- performance computing, biosciences, telecommunications, multimedia, the Internet, e-commerce), the region serves as the banking and financial center for the western United States, and has a thriving entertainment and tourism industry. The Bay Area's strategic location as a gateway to the Pacific Rim also positions it as a major international trade and transportation hub. All of this economic activity is reflected in substantial employment growth, relatively low unemployment rates, strong retail spending, and a historically strong real estate market.

According to estimates from ABAG, total 2000 employment in the Bay Area exceeded 3.6 million jobs. ABAG reports that total Bay Area employment increased by 482,510 jobs between 1990 and 2000, a 15 percent gain. An additional 999,360 new jobs are projected for the Bay Area between 2000 and 2020. Employment data for the region are shown in Table 18.

Services comprise the largest employment sector in the Bay Area, accounting for 1.4 million jobs in 2000, over 37 percent of all employment. The second largest category is the combined Wholesale Trade and Retail Trade sectors which together make up 779,580 jobs in 2000, approximately 22 percent of total jobs. With 558,790 jobs and over 15 percent of total employment, Manufacturing represents the third largest sector.

According to ABAG estimates, Services employment will grow by 528,400 new jobs between 2000 and 2020, at an average annual growth rate of 1.6 percent. By 2020, Services are projected to comprise almost 41 percent of all jobs. A large portion of this growth is projected to occur in Business Services, which would add 196,810 new jobs between 2000 and 2020, at an average annual growth rate of 1.6 percent. This trend follows a national shift in the economy towards the Service sector.

The combined Wholesale Trade and Retail Trade industries are expected to add 172,480 new jobs between 2000 and 2020. However, these sectors' combined share of total employment would fall to 20.3 percent. By 2020, the Manufacturing sector is projected to fall to 14.5 percent of total employment.

San Francisco

Table 18 presents employment data by industry sector for the City and County of San Francisco. ABAG currently estimates that there are 628,860 jobs in San Francisco, with employment expected to increase to 731,660 over the next twenty years, at an average annual rate of 0.8 percent. In contrast to the region, Services jobs comprise the largest share of the San Francisco economy, with 277,710 jobs, or 44.2 percent of total employment. Business services, a subcategory of Services, represent 18.5 percent of total jobs. Wholesale and Retail Trade are the second largest industry sectors, combining to almost 17 percent of total employment with 106,460 jobs.

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Table 16: Definition of the Housing Impact Area

District of Residence	Superdistrict Number	District of Work	Number (a)	% of All Commuters to Richmond Superdistrict
Downtown SF	1	Richmond district	5,506	5.4%
Richmond district	2	Richmond district	32,373	31.7%
Mission District	3	Richmond district	15,711	15.4%
Sunset District	4	Richmond district	8,035	7.9%
Daly City/San Bruno	5	Richmond district	8,270	8.1%
San Mateo/Burlingame	6	Richmond district	2,216	2.2%
Hayward/San Leandro	17	Richmond district	1,482	1.5%
Oakland/Alameda	18	Richmond district	4,495	4.4%
Berkeley/Albany	19	Richmond district	1,467	1.4%
Richmond/El Cerrito	20	Richmond district	2,391	2.3%
Concord/Martinez	21	Richmond district	1,605	1.6%
Vallejo/Benicia	25	Richmond district	1,204	1.2%
Fairfield/Vacaville	26	Richmond district	1,242	1.2%
Novato	32	Richmond district	680	0.7%
San Rafael	33	Richmond district	2,330	2.3%
Mill Valley/Sausalito	34	Richmond district	3,228	3.2%
Total			92,235	90.3%
All Commuters to Richmond Superdistrict (b)			102,141	

Sources: Metropolitan Transportation Commission, *Commuter Forecasts for the San Francisco Bay Area, 1990-2020*; Bay Area Economics, 2000.

Notes:

- (a) Forecasts for 2020.
- (b) Remaining 9.7 percent of commuters originate from superdistricts with less than 1 percent of commuters or from elsewhere.

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Table 17: Housing Impact Area Population Characteristics

Housing Impact Area (a)	2000	2020	Change 2000-2020	% Change 2000-2020
Population	3,380,940	3,765,136	384,196	11%
Households	1,243,115	1,381,584	138,469	11%
Average Household Size	2.66	2.66	0	0%
Average Workers per Household	1.26	1.38	0.11	9%
Mean Household Income (b)	\$57,618	\$71,162	\$13,544	24%

Sources: Metropolitan Transportation Commission Superdistrict and County Summaries of ABAG Projections, 2000; Bay Area Economics, 2000.

Notes:

- (a) Housing Impact Area includes the MTC superdistricts listed in Definition of the Housing Impact Area Table.
- (b) In constant 1989 dollars.

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Table 18: Employment Projections by Industry Sector - Bay Area and San Francisco

BAY AREA		1990		2000		2020		Avg. Annual Change '00-'20
INDUSTRY SECTOR		Number	Percent	Number	Percent	Number	Percent	
Agriculture and Mining		36,980	1.2%	37,780	1.0%	36,550	0.8%	-0.2%
Construction		148,360	4.6%	185,800	5.0%	223,230	4.8%	0.9%
Manufacturing		516,920	16.1%	558,790	15.1%	680,790	14.5%	1.0%
<i>High Technology</i>		273,790	8.5%	302,920	8.2%	349,820	7.5%	0.7%
Transportation/Public Utilities		189,390	5.9%	223,570	6.1%	293,390	6.3%	1.4%
Wholesale Trade		192,000	6.0%	199,620	5.4%	266,280	5.7%	1.5%
Retail Trade		534,960	16.7%	579,960	15.7%	685,780	14.6%	0.8%
Finance, Insurance & Real Estate		228,310	7.1%	240,550	6.5%	280,700	6.0%	0.8%
Services		1,067,460	33.3%	1,390,860	37.7%	1,919,260	40.9%	1.6%
<i>Business Services</i>		370,550	11.6%	541,050	14.7%	737,860	15.7%	1.6%
Government		291,700	9.1%	271,660	7.4%	301,970	6.4%	0.5%
Total Employment		3,206,080	100%	3,688,590	100%	4,687,950	100%	1.2%
CITY AND COUNTY OF SAN FRANCISCO		1990		2000		2020		Avg. Annual Change '00-'20
INDUSTRY SECTOR		Number	Percent	Number	Percent	Number	Percent	
Agriculture and Mining		2,300	0.4%	2,300	0.4%	2,180	0.3%	-0.3%
Construction		16,350	2.8%	19,750	3.1%	23,130	3.2%	0.8%
Manufacturing		39,790	6.9%	41,800	6.6%	46,580	6.4%	0.5%
<i>High Technology</i>		3,700	0.6%	4,370	0.7%	6,850	0.9%	2.3%
Transportation/Public Utilities		40,290	7.0%	44,180	7.0%	49,380	6.7%	0.6%
Wholesale Trade		30,560	5.3%	25,150	4.0%	28,770	3.9%	0.7%
Retail Trade		80,120	13.8%	81,310	12.9%	88,600	12.1%	0.4%
Finance, Insurance & Real Estate		75,400	13.0%	75,820	12.1%	82,960	11.3%	0.5%
Services		229,470	39.6%	277,710	44.2%	347,010	47.4%	1.1%
<i>Business Services</i>		103,440	17.9%	116,630	18.5%	159,220	21.8%	1.6%
Government		64,900	11.2%	60,840	9.7%	63,050	8.6%	0.2%
Total Employment		579,180	100%	628,860	100%	731,660	100%	0.8%

Sources: Association of Bay Area Governments, *Projections 2000*; Bay Area Economics, 2000.

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Over the next two decades, ABAG anticipates the growth of the Service sector's prominence in the San Francisco economy, increasing by 69,300 jobs at an average annual growth rate of 1.1 percent. Approximately 47 percent of San Francisco jobs are projected to be in the Services by 2020. As with the region, expansion in the Business Services sector drives much of this growth. By 2020, Business Services are projected to make up 21.8 percent of total employment with 159,220 jobs.

Housing Impact Area

Table 19 contains employment data by industry sector for the Housing Impact Area. ABAG projects employment to grow from 1.8 million to 2.2 million between 2000 and 2020, at an average annual rate of 1.0 percent. Once again, the Service sector represents the bulk of the area's economy, with 711,861 jobs and over 39 percent of total employment. By 2020, the Service sector is expected to comprise 42.2 percent of the economy, with 940,841 jobs.

Table 19: Employment Projections by Industry Sector - Housing Impact Area

Housing Impact Area		2000		2020		Average Annual Change '00-'20
Industry Sector	Number	Percent	Number	Percent		
Agricultural	12,631	0.7%	11,953	0.5%	-0.3%	
Manufacturing	151,786	8.4%	181,290	8.1%	0.9%	
Wholesale	97,421	5.4%	120,881	5.4%	1.1%	
Retail	286,220	15.8%	326,942	14.7%	0.7%	
Service	711,861	39.3%	940,841	42.2%	1.4%	
Other	550,162	30.4%	648,054	29.1%	0.8%	
Total	1,810,08		2,229,96			
Employment	1	100.0%	1	100.0%	1.0%	

Sources: Metropolitan Transportation Commission, *Superdistrict and County Summaries of ABAG's Projections 2000, 1990-2020*; Bay Area Economics, 2000.

Presidio Employment

Reports prepared for the Trust state that there are currently approximately 2,020 employees in the Presidio. For historical comparison, in 1990 during the Army's occupation there were approximately 5,550 employees in the

Presidio. A 1999 Presidio employee survey found that approximately 41 percent of Presidio-based employees work for government agencies, 16 percent are in the private sector, and 42 percent are in non-profit organizations. (Figures do not total 100 percent due to rounding.)

HOUSING

This section describes the current housing market conditions in the Housing Impact Area. It examines the housing stock, rental and ownership markets, and affordability. Although the housing market is likely to shift dramatically between 2000 and the PTMP implementation, this information helps to establish the baseline conditions for analysis. This section also includes data on existing housing stock at the Presidio.

The Bay Area housing market has traditionally ranked as one of the most expensive housing markets in the country due to strong population and employment growth and lack of developable land. During the recent Internet-led economic boom, the Bay Area's regional housing market became the most expensive in the nation. It is anticipated that this trend of high housing costs will continue. ABAG projects a potential of 503,360 additional dwelling units and an 509,940 additional households between 1995 and 2020 for the Bay Area, resulting in a net shortage of 6,580 units.

The Housing Impact Area, as a subset of the Bay Area, suffers from similar conditions. The housing market in the Housing Impact Area is discussed in detail in the following section.

Housing Stock

As shown in Table 20, ABAG estimates the total current number of occupied units in the Housing Impact Area to be 1.2 million. Approximately 694,774, or 55.9 percent, of these are single-family dwellings, and 548,341, or 44 percent, are multifamily dwellings. The total number of occupied units is expected to increase to 1.4 million by 2020, but the breakdown between single and multifamily units is projected to remain relatively constant.

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Table 20: Housing Stock In Housing Impact Area

Superdistrict	2000		2020		% Change in Number of Units 2000-2020	Change as % of Total New Units
	Number of Units (a)	% of Total	Number of Units (a)	% of Total		
Downtown SF	61,580	5.0%	66,946	4.8%	9%	3.9%
Richmond district	97,847	7.9%	100,465	7.3%	3%	1.9%
Mission District	107,691	8.7%	114,762	8.3%	7%	5.1%
Sunset District	48,471	3.9%	49,352	3.6%	2%	0.6%
Daly City/San Bruno	97,391	7.8%	105,603	7.6%	8%	5.9%
San Mateo/Burlingame	79,568	6.4%	88,479	6.4%	11%	6.4%
Hayward/San Leandro	119,795	9.6%	130,919	9.5%	9%	8.0%
Oakland/Alameda	166,522	13.4%	172,685	12.5%	4%	4.5%
Berkeley/Albany	67,792	5.5%	71,515	5.2%	5%	2.7%
Richmond/El Cerrito	83,901	6.7%	93,717	6.8%	12%	7.1%
Concord/Martinez	82,733	6.7%	96,506	7.0%	17%	9.9%
Vallejo/Benicia	49,752	4.0%	59,092	4.3%	19%	6.7%
Fairfield/Vacaville	80,568	6.5%	120,116	8.7%	49%	28.6%
Novato	21,439	1.7%	25,449	1.8%	19%	2.9%
San Rafael	42,443	3.4%	47,464	3.4%	12%	3.6%
Mill Valley/Sausalito	35,622	2.9%	38,514	2.8%	8%	2.1%
MFD (b)	548,341	44.1%	599,742	43.4%	9%	37.1%
SFD (c)	694,774	55.9%	781,842	56.6%	13%	62.9%
Total	1,243,115	100.0%	1,381,584	100.0%		100.0%

Sources: Metropolitan Transportation Commission, *Superdistrict and County Summaries of ABAG's Projections 2000, 1990-2020*; Bay Area Economics, 2000.

Notes:

- (a) Only includes occupied units.
- (b) MFD = Multifamily dwelling.
- (c) SFD = Single family dwelling.

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Three counties – Solano, Contra Costa, and Alameda – are expected to absorb approximately 68 percent of new housing constructed in the Housing Impact Area between 2000 and 2020. In Solano, the Fairfield/Vacaville Superdistrict alone is expected to gain almost 40,000 occupied units, which represents over 28 percent of all occupied units constructed in the Housing Impact Area during this period. In west Contra Costa County, the Richmond/El Cerrito and Concord/Martinez Superdistricts together account for 23,589 occupied new units, or 17 percent of total units projected to be built in the Housing Impact Area. Finally, in Alameda, the Hayward/San Leandro, Oakland/Alameda, and Berkeley/Albany Superdistricts contain over 15 percent of occupied units projected to be built in the Housing Impact Area over the next two decades.

Rental Market

Table 21 presents rental housing cost data for the Housing Impact Area. Rental rates in the Housing Impact Area increased significantly over the last two years. Between 1998 and 2000, the average rent rose by approximately 29.6 percent, and vacancy rates fell 2.4 percentage points. According to a Real Facts survey of multifamily complexes with at least 50 units, the average rent in the Housing Impact Area was \$1,537 a month and the average vacancy rate was 1.4 percent, as of the end of the third quarter 2000.

Table 22 contains data on rental affordability in the Housing Impact Area. Affordable rents are calculated for households at the 25th percentile, the median, and the 75th percentile of Bay Area incomes in 2000. Bay Area household incomes (see Table 14) are used as a proxy for Presidio employees' household incomes. Households at the 25th percentile of household income can afford a monthly rent of \$837; households at the median household income can afford a monthly rent of \$1,564; and households at the 75th percentile of household income can afford a monthly rent of \$2,541. All affordable rents include utilities, and represent 30 percent of the household income. Table 22 shows the monthly rent ranges of various unit types in the Housing Impact Area. These can be compared to the affordable rents for each income level to offer a sense of what unit types are available within affordable ranges.

Ownership Market

Table 23 contains data on all full, verified, confirmed sales in the Housing Impact Area between October 1, 2000 and October 31, 2000. Using these sales as a sample, the median single-family home in the Housing Impact Area is \$316,000. The median sale price of a condominium in the Housing Impact Area during the same period is \$235,000.

Table 24 presents an affordability analysis for ownership housing in the Housing Impact Area, using the Bay Area 2000 household income distribution (see Table 14) as a basis for determining affordability. Again, Bay Area household incomes are used as a proxy for Presidio employees' household incomes. Households at the 25th percentile of household income can afford 2 percent of the single-family homes sold during October 2000 in the Housing Impact Area. Households with the median household income can afford 26 percent of the single-family homes sold during the same period, and households at the 75th percentile can afford 57 percent of homes sold.

Condominiums are somewhat more affordable. Households at the 25th percentile of household income can afford 4 percent of condominiums sold in October within the Housing Impact Area. Households at median and 75th percentile of household incomes can afford 33 percent and 69 percent of condominiums, respectively.

Presidio Housing Stock

The Presidio currently has 1,116 multifamily and single-family housing units. As of June 2001, approximately 873 of these were occupied. See Table 25 for details on unit types and quantities. In addition, the Presidio currently has approximately 538 single-room occupancy units.

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Table 21: Overview of the Housing Impact Area Rental Housing Market

CURRENT MARKET DATA				
Unit Type	Number	Percent of Mix	Avg. Sq Ft	Avg. Rent (a)
Studio	8,517	7.1%	486	\$1,286
1 BR/1 BA	50,725	42.3%	692	\$1,394
2 BR Twnhse	3,202	2.7%	1,068	\$1,646
2 BR/1 BA	21,771	18.1%	865	\$1,437
2 BR/2 BA	31,279	26.1%	1,001	\$1,798
3 BR Twnhse	483	0.4%	1277	\$1,895
3 BR/2 BA	4,078	3.4%	1,261	\$2,241
Totals	120,055	100.0%	821	\$1,537
AVERAGE RENT HISTORY				
Unit Type	1998(b)	1999(b)	2000 (b)	1998-2000 Change
Studio	\$929	\$997	\$1,174	17.8%
1 BR/1 BA	\$983	\$1,061	\$1,276	20.3%
2 BR Twnhse	\$1,216	\$1,357	\$1,551	14.3%
2 BR/1 BA	\$1,031	\$1,106	\$1,312	18.6%
2 BR/2 BA	\$1,275	\$1,367	\$1,656	21.1%
3 BR Twnhse	\$1,423	\$1,582	\$1,755	10.9%
3 BR/2 BA	\$1,545	\$1,678	\$2,056	22.5%
All	\$1,089	\$1,176	\$1,411	20.0%
OCCUPANCY RATE				
Year(b)	Average Occupancy			
1998	96.1%			
1999	97.0%			
2000	98.5%			
AGE OF HOUSING INVENTORY				
Year	Percent of Inventory			
Pre 1960s	5%			
1960s	30%			
1970s	29%			
1980s	29%			
1990s	7%			

Sources: Real Facts, Inc.; Bay Area Economics, 2000.

Notes:

(a) September 2000 data.

(b) 1998-99 – 4 quarter average; 2000 – 3 quarter average.

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Table 22: Rental Housing Affordability Analysis

INCOME AND AFFORDABILITY			
Income Level	Estimated Household Income (a)	Monthly Affordable Rent (b)	
25th percentile	\$33,462	\$837	
Median	\$62,571	\$1,564	
75th percentile	\$101,652	\$2,541	

RENTS (c)			
Unit Type	Average Low Rent (d)	Average High Rent (e)	Average Rent
Studio	\$1,235	\$1,389	\$1,286
1 BR/1 BA	\$1,349	\$1,483	\$1,394
2 BR Twnhse	\$1,624	\$1,691	\$1,646
2 BR/1 BA	\$1,402	\$1,506	\$1,437
2 BR/2 BA	\$1,739	\$1,916	\$1,798
3 BR Twnhse	\$1,853	\$1,853	\$1,895
3 BR/2 BA	\$2,195	\$2,195	\$2,241
Totals	\$1,491	\$1,630	\$1,537

Sources: Real Facts, Inc.; Claritas, Inc.; Bay Area Economics, 2000.

Notes:

- (a) From Estimated 2000 Household Income Distribution Table.
- (b) Affordable rent is considered to be 30% of household income, including utilities.
- (c) From Real Facts survey of apartment complexes with 50 or more units in Housing Impact Area. Rents as of September 2000, and include 2BR and 3BR townhouses.
- (d) Average Low Rent is a weighted average of lowest-rent units in apartment complexes surveyed.
- (e) Average High Rent is a weighted average of highest-rent units in apartment complexes surveyed.

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Table 23: Overview of Housing Impact Area For-Sale Housing Market

Single Family Residences			Condominiums		
Sale Price	Number of Units	% of Total	Sale Price	Number of Units	% of Total
Less than \$100,000	47	1.9%	Less Than \$100,000	46	7.4%
\$100,000 to \$124,999	45	1.8%	\$100,000 to \$149,999	86	13.8%
\$125,000 to \$149,000	87	3.6%	\$150,000 to \$159,999	16	2.6%
\$150,000 to \$174,999	152	6.2%	\$160,000 to \$169,999	25	4.0%
\$175,000 to \$199,999	183	7.5%	\$170,000 to \$179,999	23	3.7%
\$200,000 to \$224,999	141	5.8%	\$180,000 to \$189,999	18	2.9%
\$225,000 to \$249,999	142	5.8%	\$190,000 to \$199,999	21	3.4%
\$250,000 to \$274,999	199	8.1%	\$200,000 to \$209,999	29	4.7%
\$275,000 to \$299,999	134	5.5%	\$210,000 to \$219,999	17	2.7%
\$300,000 to \$324,999	118	4.8%	\$220,000 to \$229,999	19	3.1%
\$325,000 to \$349,999	99	4.0%	\$230,000 to \$239,999	20	3.2%
\$350,000 to \$374,999	112	4.6%	\$240,000 to \$249,999	12	1.9%
\$375,000 to \$399,999	104	4.2%	\$250,000 to \$259,999	13	2.1%
\$400,000 to \$449,999	164	6.7%	\$260,000 to \$269,999	22	3.5%
\$450,000 to \$499,999	144	5.9%	\$270,000 to \$279,999	12	1.9%
\$500,000 to \$549,999	108	4.4%	\$280,000 to \$289,999	14	2.3%
\$550,000 to \$599,999	73	3.0%	\$290,000 to \$299,999	10	1.6%
\$600,000 to \$649,999	73	3.0%	\$300,000 to \$399,999	89	14.3%
\$650,000 to \$699,999	58	2.4%	\$400,000 to \$499,999	49	7.9%
\$700,000 to \$749,999	45	1.8%	\$500,000 and Above	81	13.0%
\$750,000 to \$799,999	38	1.6%	Total (a)	622	100.0%
\$800,000 to \$849,999	24	1.0%	Median Sale Price	\$235,000	
\$850,000 to \$899,999	25	1.0%			
\$900,000 to \$949,999	18	0.7%			
\$950,000 to \$999,999	8	0.3%			
\$1,000,000 to \$1,499,999	44	1.8%			
\$1,500,000 to \$1,999,999	24	1.0%			
\$2,000,000 and Above	40	1.6%			
Total (a)	2,449	36.2%			
Median Sale Price	\$316,000				

Sources: First American Real Estate Services; Bay Area Economics, 2000.

Note:

(a) Represents all full, verified, and confirmed sales within the Housing Impact Area between 10/01/00 and 10/31/00.

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Table 24: For-Sale Housing Affordability Analysis

Income Level	Single-Family Residences			Condominiums			
	Estimated Household Income (a)	Affordable Sale Price (b)	Number of Affordable Units (c)	% of All Sales	Affordable Sale Price (d)	Number of Affordable Units (e)	% of All Sales
25th percentile	\$33,462	\$108,010	57	2%	\$82,381	23	4%
Median	\$62,571	\$219,697	633	26%	\$184,586	203	33%
75th percentile	\$101,652	\$356,917	1385	57%	\$321,805	429	69%

Sources: Claritas, Inc.; First American Real Estate Services; Bay Area Economics, 2000.

Notes:

- (a) From Table 14: Estimated 2000 Household Income Distribution.
- (b) Assumes 8.0 percent annual fixed interest, 30 year term, 20 percent of sale price down payment, 1.3 percent property tax, 0.2 percent of sale price annual insurance, 0.75 percent hazard insurance, 30 percent of household income available for principal, interest, taxes, insurance.
- (c) Of all full and verified single-family home sales in Housing Impact Area from 10/01/00 to 10/31/00. Table 23 contains sales data.
- (d) Assumes 8.0 percent annual fixed interest, 30 year term, 20 percent of sale price down payment, 1.3 percent property tax, 0.2 percent of sale price annual insurance, \$250/month homeowners dues, 30 percent of household income available for principal, interest, taxes, insurance.
- (e) Of all full and verified condominium sales in Housing Impact Area from 10/01/00 to 10/31/00.

Table 25: Current Presidio Housing Inventory

	1-BR	2-BR	3-BR	4-BR	5+BR	Total
Historic	10	26	136	99	30	301
Non-Historic	0	210	362	243	0	815
Inventory Total	10	236	498	342	30	1,116

Source: Presidio Trust; Bay Area Economics, 2001.

Presidio Residential Leasing Programs

The Trust has implemented several residential leasing programs designed to provide a range of housing opportunities at the Presidio. In the general residential leasing program, rents are set to reflect market conditions, pursuant to the Trust's residential leasing policy. Although some of these units have been rented temporarily to the general public, it is anticipated that Presidio-

based employees and their families eventually will occupy a significant portion of Presidio housing. To that end, the Trust has established a priority system to ensure that Presidio based employees have the first opportunity to lease residential units. For the purposes of providing and expanding housing opportunities for Presidio-based employees, the Trust has adopted a Preferred Renter Program, a Public Safety Housing Program, and a Housing for Small Households Program.

The Preferred Renter Program offers reduced rental rates to Presidio employee households earning up to 100 percent of district median income adjusted for household size. Eligible participants are Presidio-based employees that are employed for a minimum of 32 hours per week. Tenants pay 40 percent of income for rent, including utilities. One hundred and fifty (150) units set aside for this program in Quarry, MacArthur, Sanches, and Wherry are allocated as follows: (i) 30 percent of units for households earning 30 percent of the district median (\$22,470); (ii) 55 percent of units for households

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3.4.4 VISITOR EXPERIENCE

The Presidio has a number of programs and facilities that provide visitors with opportunities to learn about the Presidio's history, resources, and efforts to transform from a military post to a national park. Visitor information centers include the William Penn Mott Jr. NPS Visitor Center and the Crissy Field Center. Other visitor facilities include other interpretive sites, interpretive waysides, exhibition halls, special event venues, a native plant nursery, and the Calvary Stables. Programs provided by the National Park Service, the Presidio Trust, and tenants give visitors a greater understanding of the park and its resources.

As authorized by Congress in the Trust Act, the NPS, in cooperation with the Trust, is responsible "for providing public interpretive services, visitor orientation, and educational programs on all lands within the Presidio." The NPS and Trust are jointly working on a plan for Presidio interpretation that will provide a framework for carrying out interpretive programs. This plan will identify Presidio interpretive themes and stories, describe how they connect with each other, and identify where and how they can be best conveyed to the visiting public. These interpretive programs are instrumental in creating a vibrant and educational visitor experience.

According to the National Park Service's visitation database from the year 2000, the GGNRA (including Muir Woods National Monument, Fort Point, and the SF Maritime Museum) had approximately 20.5 million recreational visitors (NPS Visitation Database, www.nps.gov.) Presidio-wide estimates were not specifically broken out in the NPS database, however, as part of this environmental analysis estimates for current (2001) and future (2020) Presidio visitation were developed (refer to Section 4.4.4 for additional information). Based on the EIS estimates, current annual recreational visitation within the Presidio is approximately 4.6 million, with 2 million visitors to Area A and 2.6 million in Area B.

INTERPRETATION/VISITOR INFORMATION FACILITIES

William Penn Mott Jr. NPS Visitor Center-The William Penn Mott Jr. NPS Visitor Center is the main contact point for visitors to the Presidio. The center

is open year-round and is located in Building 102 on Montgomery Street at the Main Post and is managed by the National Park Service. The Visitor Center contains a theater and rotating exhibits, and serves as a primary staging area for ranger-led tours and other interpretive programs. The Visitor Center also contains some of the Army's historical memorabilia formerly housed in the former Presidio Museum.

The Crissy Field Center and Warming Hut-The Crissy Field Center is located in Building 603, on the corner of Mason and Halleck Streets. Opened in Spring 2001, its goal is to welcome visitors to Crissy Field and create connections between GGNRA sites and Bay Area communities. Managed by the Golden Gate National Parks Association (GGNPA), the center provides classroom space, a laboratory, and a café.

The Crissy Field Warming Hut, opened in 2001, provides park information at the west end of Crissy Field (Area A) along with a bookstore and café.

Fort Point National Historic Site- The Fort Point National Historic Site is located within Area A and is managed by the NPS. It provides educational programs for school groups, a self-guided and audio tour of the Fort, two videos, bookstore, and visitor information.

Informal Visitor Information Centers- Other visitor contact sites are used to distribute printed information, such as park brochures, maps and other publications, to visitors. These include the Trust's headquarters located at Building 34, the Residential Leasing Office in Building 558, the Golden Gate Club in Building 135, the Presidio Officer's Club in Building 50, and the Post Office and bank in Building 210. Many leased buildings also have display areas where current events, transit information, and publications are available to visitors.

Wayfinding Kiosks and Signage, and Wayside Signs- Orientation and wayfinding kiosks being installed throughout the Presidio and contain information about transit, hiking and bicycling routes, points of interest, and noteworthy attractions.

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To support visitor, resident, and employee use of the Park, and to provide visitors with a sense of entry into the Presidio, entrance signs are located at all major gates and directional signage directs visitors to key features of the park.

Numerous wayside exhibits, already exist at key interpretive sites and points of interest throughout the Presidio. A second phase of waysides is being installed in 2002 consistent with Presidio-wide wayside program, and additional phases will follow, pending availability of funds.

INTERPRETATION PROGRAMS

The National Park Service provides a variety of interpretive programs to visitors. These programs include traditional ranger-led walking tours, and programs at Crissy Field Center focusing on such themes as environmental stewardship, curriculum-based learning, sustainability, youth development, community involvement, public service, restoration and visitor services.

VISITOR FACILITIES

Main Post Parade Ground - The Main Post's parade ground is a key focal point for visitor activities that offers capacity for special events such as large group gatherings, including concerts, exhibits, races, runs, expositions, cultural events, picnics, rides, filming and displays. Pershing Square is located at the south end of the Parade Ground. This square hosts historic, military and ceremonial events, and interpretive demonstrations and talks.

Presidio Officers' Club (Building 50) - The former Officers' Club, located on the Main Post, is the oldest building on the Presidio. The Officers' Club was renovated and re-opened to public use in 2001. The building is used for events, gatherings, special events, performances, lectures and other festivities.

Herbst International Exhibition Hall (Building 385) - On the Presidio's Main Post, the Herbst International Exhibition Hall, renovated in 1996, is a freestanding building with 5,476 square feet of exhibition space. It offers facilities for regional, national and international exhibitions and special events and is managed by the Fort Mason Foundation. In addition to exhibit space, the Exhibition Hall offers a gift shop, food service, and staging and storage areas.

Post Chapel (Building 130) - The chapel, located on the Main Post, provides a venue for a variety of cultural and artistic events. A growing music program, interfaith ceremonies, and other cultural events are held regularly at the Presidio Chapel, sponsored by the Interfaith Center.

Golden Gate Club (Building 135) - The GGNPA manages the Golden Gate Club as a meeting, conference and special event facility. The building accommodates training classes, workshops, meetings, weddings and receptions in its three ballrooms and seven dedicated meeting rooms.

Native Plant Nursery (Building 1244) - This nursery, managed by the GGNPA, NPS, is located at Fort Scott. Full-time staff, volunteers and students propagate native plant species at the nursery, while visitors are introduced to nursery operations and propagation techniques, Presidio restoration efforts, and plant biology.

Recycling/compost center (Building 1243) - the recycling center, located at Fort Scott, is open to visitors and serves as a model facility and education site. The recycling center was established by the trust in cooperation with the San Francisco Conservation Corps. Young adults engaged in job-training collect recyclable materials from park tenants, recreation sites, and special events. A comprehensive composting program diverts organic debris from waste that would otherwise be sent to landfills. This program serves as an educational tool for visitors and school groups. The educational component of the composting program is managed in a partnership with the Golden Gate National Parks Association.

Cavalry Stables (Building 661) - The U.S. Park Police operates a stable and paddock at the Cavalry Stables for their mounted patrol. The facility itself is not open to general visitors, but it is used for NPS educational programs to tell the history of the U.S. Cavalry and the Buffalo Soldiers in the Philippine American War.

Scenic Viewing - Several places within the Presidio provide opportunities for scenic viewing. The parking area and plaza at Inspiration Point have recently been upgraded, and views of the bay enhanced through tree removal. Other key overlooks are located off Lincoln Boulevard (view of Crissy Field, the bay, and downtown) and Washington Avenue (ocean and Golden Gate). The

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World War II Memorial located above Lincoln Boulevard at Kobbe Avenue also serves as an overlook over the Pacific Ocean. (See Figure 24.)

Scenic viewing is also enjoyed by following the 49-mile Scenic Drive that winds its way through the Presidio, including through sections of the Main Post, the historic forest, and along Lincoln Boulevard.

World War II Memorial-The American Battle Monuments Commission's "West Coast Memorial to the Missing" overlooks the Pacific Ocean, in western Fort Scott. A curved wall of California granite bears the names of 412 members of the Armed forces who lost their lives in the offshore Pacific coastal waters during World War II. The memorial was dedicated on November 29, 1960, and was recently restored.

The Log Cabin (Building 1299)- This former non-commissioned officers club in Fort Scott provides space for events, meetings, and other festivities.

Pet Cemetery- The pet cemetery, located north of the Cavalry Stables under Doyle Drive, is the final resting place for pets of Army families. It has been maintained at its present size since the transfer of the Presidio from the Army.

Exhibits in Leased Buildings- Tenants in various leased buildings have developed interpretation programs and use public spaces within their buildings for exhibiting information about the building, its association with Presidio history or other park resources, or to interpret their own mission and activities. Examples include the Thoreau Center in Building 1016, which has historical photographs lining the hallways, and the San Francisco Film Institute in Building 39, which has temporary exhibitions and photographs of award-winning film directors in the hallways.

Historic Building Panels - The Trust has initiated a program in collaboration with the NPS to install historic building interpretive panels within the lobbies of recently rehabilitated buildings (non-residential). To date ____ have been completed and a second phase is under production. The goal is to complete these for all non-residential, historic buildings.

VISITOR SERVICES

Lodging- Currently, overnight lodging is not available at the Presidio to the general public; however, Buildings 40, 41, and 1028 are dormitories for participants in internship and volunteer programs.

Food Services- A variety of small food service facilities currently offer a selection of menu options at the Presidio. These include breakfast and lunch cafes, and snack facilities.

PARK-BASED PROGRAMS

Exhibitions, Events and Cultural Programs- Both the Trust and the NPS work to bring special programs and events to the Presidio for visitors. Examples of the exhibits, events, and cultural programs to date include:

- *Presidio Pasados*, an annual event commemorating the establishment of San Francisco and focusing on history, culture and archaeology;
- Memorial Day and Veteran's Day celebrations;
- Community events, such as the Halloween Parade and Haunted House, a Day of Thanks to celebrate Thanksgiving, and the Christmas Tree Lighting Ceremony;
- Folklife festivals, such as the Aloha Festival; and
- Special events, including marathons and bike rides.
- Lecture series
- Special exhibits

Tenant-based Programs- Many tenants of the Presidio sponsor programs for the Presidio in which community members, local residents, and park visitors may participate. These programs cover a range of fields, from environmental, art, music, history, and general education. The Thoreau Center in Building 1016, for instance, offers an assortment of lectures, seminars, and brown bag series for employees and the general public. The San Francisco Film Institute in Building 39 has hosted temporary exhibits in conjunction with its annual film festival.

Stewardship Programs-Natural and Cultural- The Trust, in collaboration with the NPS and GGNPA, provides volunteer stewardship programs, organizes

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volunteer workdays, offers lectures and presentations, and sponsors events and other festivities focused on natural resource protection and restoration. Three facilities currently support stewardship programs, including two Natural Resources Field offices and the Native Plant Nursery. Summer archaeology programs for students have also been held to help increase the understanding and preservation of the Presidio's history, including a program focused on the El Presidio site on the Main Post.

3.4.5 RECREATION

The Presidio contains many of San Francisco's highly valued recreation sites and popular open space areas. Some of the recreation areas within and adjacent to the Presidio are under the jurisdiction of different agencies. The NPS manages Area A of the Presidio (the beaches on the coast and bay), as well as other nearby open space areas, the City and County of San Francisco manages the Julius Kahn playground within the Presidio's boundaries, Mountain Lake Park just outside and the Marina Green and Palace of Fine Arts. Recreation opportunities range from the private and contemplative to the most active and interactive.

PRESIDIO RECREATIONAL USER GROUPS

As stated in the GMPA EIS, Presidio users can be classified into four main groups: (1) neighborhood, (2) city, (3) regional, and (4) tourist. The places visited, the length of stays, and the frequency of visits vary among the groups.

Neighborhood users live in, or immediately around, the Presidio and visit routinely. This group frequently uses the parks and playgrounds in the Presidio, particularly Mountain Lake Park and the Julius Kahn Playground.

City users are people who live or work nearby, not far from the Presidio. Many of these users walk, bicycle, or jog to the Presidio; others drive or ride the bus. Many city users visit Crissy Field or Baker Beach, and use a variety of the Presidio's trails on the weekends.

Regional users come from throughout the Bay Area to the Presidio. Their use is limited primarily to the weekends, and occurs less frequently than city or neighborhood users.

Tourists travel from all over the country and the world to visit San Francisco. The popular 49-Mile Scenic Drive leads many of these visitors along the northern and western edges of the Presidio. Many tourists stop for a short time to view the Golden Gate Bridge and the bay, but seldom focus specifically on the Presidio. Tourists who do visit the Presidio enjoy the National Park Service's William Penn Mott Jr. Visitor Center and other key features of the park, such as Crissy Field, Fort Point, the National Cemetery or the coastal defense batteries.

RECREATIONAL USES

Recreational uses range from organized to informal, and active to passive. Active sports are provided for at a variety of indoor and outdoor facilities, and are accommodated informally in larger open spaces. Hiking occurs throughout the Presidio, although some areas are closed to protect sensitive plant species and populations, to support restoration efforts, or to ensure visitor safety. Bicycling is allowed on roads and on some designated multi-use trails. Horseback riding is not allowed on the Presidio, other than by the U.S. Park Police's mounted patrol unit. The Trust requires dogs to be on leash when in Area B.

Recreational uses may also be defined on a spectrum from passive to active, from quiet reflective moments in the historic forest, to playing softball at a defined field, or enjoying a large group gathering at the Main Post parade ground after a race through the Presidio.

TRAILS AND BIKEWAYS

Currently there are nearly 37 miles of trails available for recreational use within Area A and Area B. Of those 37 miles, there are 11 miles of bicycling trails, 6 miles of multi-use trails, and 20 miles of walking/hiking trails. Ten miles of the pedestrian trails are unofficial "social trails," created by park users, but not part of the Presidio's official trail system. Existing trails in Area A and B include the Golden Gate Promenade, the California Coastal Trail, an ecology trail, Lobos Dunes Trail, and portions of the Bay Area Ridge Trail, the San Francisco Bay Trail, and the Juan Bautista de Anza National Historic Trail.

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Two heavily used trails exist in Area A: the Golden Gate Promenade and the California Coastal Trail. The Promenade provides a route from Aquatic Park to the Golden Gate Bridge. This trail follows the alignment of the San Francisco Bay Trail along Crissy Field to Fort Point offering views of the restored dune and marsh system. The California Coastal Trail links the Presidio with the coastline of California, offering three miles of trail from Baker Beach to the Golden Gate Bridge. This trail offers views of coastal bluffs of serpentine rock and sweeping vistas of the Pacific Coast. It was named the State Millennium Trail in 2000.

The Juan Bautista de Anza National Historic Trail commemorates the 1775-1776 expedition from Mexico to the Bay Area to form a presidio and mission. Three miles of trail follow the party's course from Mountain Lake to the Golden Gate. A wayside exhibit is located at Mountain Lake interpreting the expedition.

Within Areas A and B, a 2.5-mile stretch of the Bay Area Ridge Trail enters the Presidio at the Arguello Gate, and travels through the historic forest, crossing Fort Scott before reaching the Golden Gate Bridge. This scenic trail accommodates both hikers and bicyclists and is a segment of a planned 450-mile regional trail.

Bicycles are allowed on designated multi-use trails, such as the Golden Gate Promenade at Crissy Field, on portions of the Bay Area Ridge Trail, and on paved roads. Improvements have been made on some of these roads to incorporate striped bike lanes and to incorporate directional signage developed for the City of San Francisco's bicycle route system.

Currently the NPS and the Trust are collaborating on a Presidio Trails and Bikeways Master Plan. As part of this planning effort, visitor surveys were conducted to gather trail and bicyclist user data on current use patterns, desired connections, and destinations. The surveys indicate that the most frequently used trails are the Crissy Field Promenade and the Coast Trail, and that the most frequently used roads are Lincoln and Arguello Boulevards. Overall, most of the people surveyed use Presidio trailways for exercise, recreation was second. The majority of the people interviewed believed the current condition of trails and bikeways to be "good." The highest priority for

possible improvements was to improve dangerous intersections, followed by provision of clear, safe trail connections.

This master plan will identify a network of trail and road-based corridors that link building sites, natural/cultural destinations, regional trails, public transit stops, and other recreational or open space features of the Presidio. Other elements of the plan include designating bicycle lands on roads, bicycle parking/storage opportunities, periodic road closures for cycling uses, trail informational signs, and trailheads.

RECREATIONAL FACILITIES

Outdoor Recreational Facilities

A wide range of outdoor recreational facilities are currently provided at the Presidio in Area B, including court and field sport facilities, a golf course, playgrounds, picnic areas, and a group campground. The locations of outdoor recreation facilities are shown in Figure 28.

Fields and Courts-Various sport complexes ranging from baseball fields, tennis courts, basketball courts, volleyball courts, playgrounds, and multi-use fields, are spread throughout the Presidio.

Of the five baseball fields located at the Presidio, the Fort Scott area has two lit baseball fields located within the Parade Ground. Two multi-use fields (Morton Street Field and the Julius Kahn Field) and a baseball field (Paul Goode Field) are dispersed within the East Housing Planning District. These fields are unlit and are within the Tennessee Hollow watershed. The former Pop Hicks ballfield in the East Housing Planning District is closed due to remediation concerns.

Of the twelve tennis courts at the Presidio, seven are administered by the Presidio YMCA. Two tennis courts of the Fort Scott Planning District are located west of Kobbe Avenue. One of the two tennis courts now serving the Letterman Planning will be removed as part of the 23-acre LDA Center. Three tennis courts serve the Main Post. The Main Post provides one tennis court that is located next to the Presidio Bowling Center and two tennis courts off of Infantry Terrace. Within the East Housing Planning District, there is a

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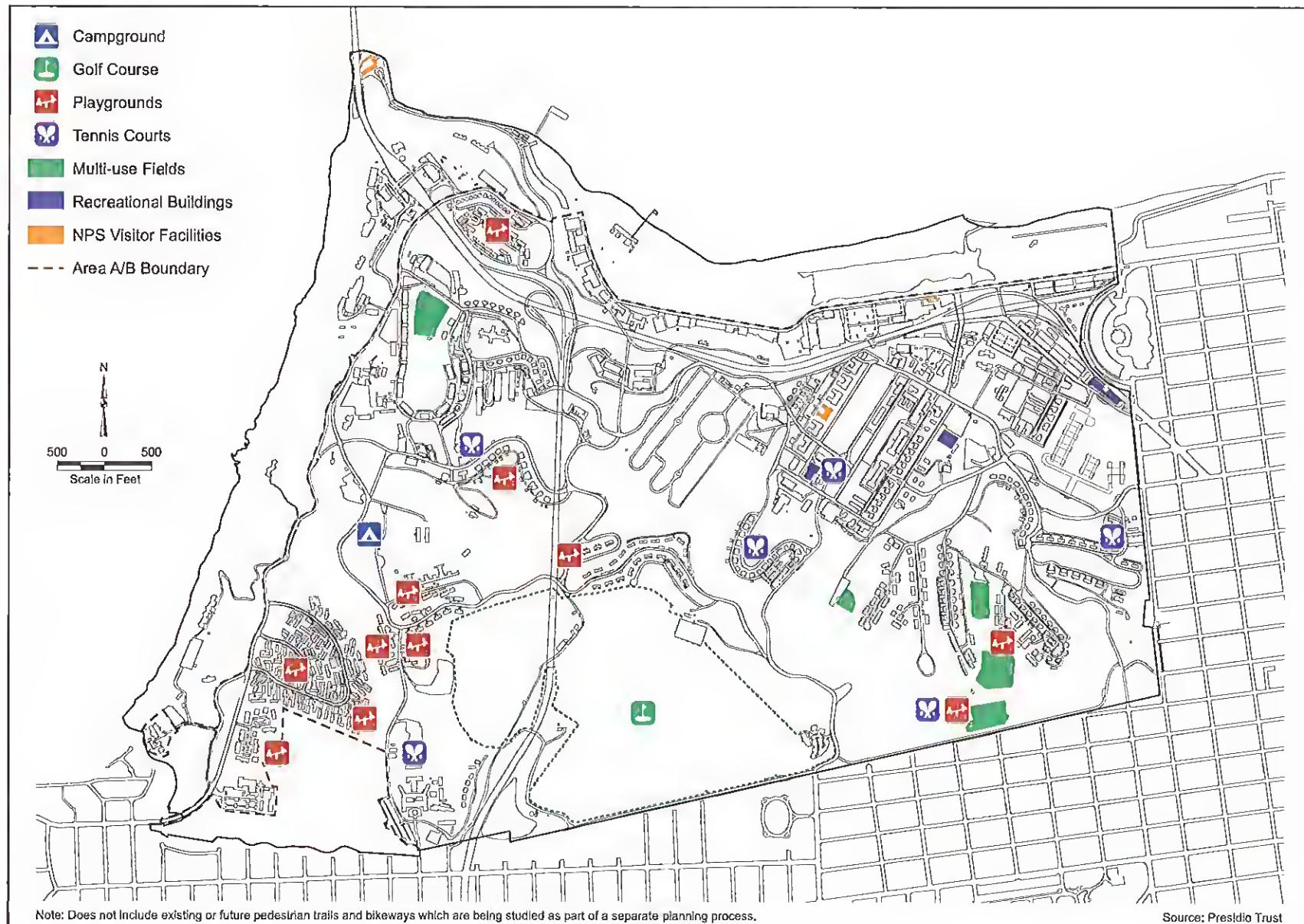


Figure 28: Recreation Facilities

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tennis court on Ruger Street and four courts at the Julius Kahn Playground, which are managed by the City and County of San Francisco. The Trust manages the tennis court north of the PSH Planning District.

Presidio Golf Course-The 160-acre Presidio Golf Course was established in 1895 as one of the earliest golf courses on the West Coast. In 1995, the U.S. Army officially transferred the Presidio Golf Course to the stewardship of the National Park Service, and opened the course to public use. The Arnold Palmer Golf Management Company manages the course and were responsible for the construction of a new clubhouse and maintenance facilities, rehabilitation of the greens, the irrigation system, and the driving range. The clubhouse is open to the public, and offers a full service Pro Shop, restaurant and meeting space.

Julius Kahn Playground- The City of San Francisco's Department of Recreation and Parks operates the Julius Kahn Playground under a 99-year ground lease. These facilities serve Presidio residents and visitors from the surrounding area. The playground, located on West Pacific Avenue, is popular for its larger play structures, forested surroundings, and targeted programming of arts and sports activities for children and adults. A basketball court, four tennis courts, and a multi-use sports field surround the playground's two sand surface play equipment areas.

Residential Playgrounds- Twelve playgrounds and "tot-lots" are spread among the residential neighborhoods of the Presidio. East Housing offers three playgrounds; West Washington Housing has three playgrounds; and East Washington Housing provides another. Wherry housing is served by three playgrounds; Pilot's Row and Kobbe Avenue are each accommodated by one playground. These playgrounds are available to both Presidio residents and visitors.

Mountain Lake- Mountain Lake is one of the few remaining freshwater lakes in San Francisco, and is the only lake within the Presidio. Within the Presidio, Mountain Lake does not have built recreational facilities other than benches adjacent to the lake's shoreline and the Juan Bautista de Anza National Historic Trail surrounding the lake's edge. However, the lake fronts

the popular Mountain Lake Park with playground equipment, jogging trails, picnic areas, tennis courts and a Par Course operated by the City and County of San Francisco. Efforts are underway to enhance the lake and its surrounding banks to improve natural functioning systems and enhance the visitor experience.

Community Garden- The Presidio Community Garden is located in the Fort Scott Planning District on a site that served as a World War II Victory Garden. The garden was re-established beginning in 1996 by a group of residents and park employees. Garden membership is open to residents, employees, and long-time park volunteers. Currently the garden has around 20 members. Members work in an individual plot as well as communal spaces. A work party meets each month to perform garden maintenance and special projects.

Rob Hill Group Camping Area - The Rob Hill Camping District, located in the forest above the coastal bluff provides organized group camping experiences. Two campsites are maintained, holding a maximum of 30 people each. The sites contain picnic tables, barbecue grills, a spigot, and restrooms. The Trust issues camping permits. Both the Bay Area Ridge Trail and the Juan Bautista de Anza National Historic Trail pass nearby.

Picnic Areas- Various picnic areas are located throughout the Presidio. The most frequented are those at Baker Beach, Fort Point, Crissy Field, El Polin Spring, Rob Hill, Mountain Lake Park, and Julius Kahn Playground. Picnic tables are also provided outside some office buildings.

Indoor Recreation Facilities

Indoor recreational facilities that serve Area B include the Main Post Gymnasium (Building 63), Letterman Gymnasium (Building 1152), the Letterman Pool (Building 1151), and the Presidio Bowling Center (Building 93). Buildings 63 and 1151 are presently operated by the Presidio YMCA for public use.

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Some former Army recreation facilities exist, but are not currently in use. These include the now vacant Fort Winfield Scott Gymnasium (Building 1226), Fort Winfield Scott Recreation Center (Building 1387), and the Main Post Community Center (Building 122).

Presidio YMCA- In early 1997, the new Presidio YMCA merged with the Richmond district and Buchanan branches to form the Presidio Community YMCA. The Presidio YMCA rehabilitated and leased the building that was once home to the U.S. Army YMCA (Building 63). Membership in the Presidio YMCA provides access to one gym, squash and racquetball courts, and seven outdoor tennis courts throughout the Presidio. A separate facility in the Letterman Planning District contains two pools. Memberships are available to park employees and tenants as well as the general public. The YMCA also sponsors special events and overnight trips.

Presidio Bowling Center- The Bowling Center on the Main Post provides twelve bowling lanes with a snack bar and grill, jukebox, foosball table, and arcade room. Every year, approximately ten adult leagues and youth leagues regularly use the facility in addition to the general public.

PASSIVE RECREATION

Passive recreational opportunities abound at the Presidio. Lobos Creek and woodlands in the south hills provide opportunities for contemplation, natural history exploration, bird and wildflower observation, and other passive recreation experiences. Grasslands at Inspiration Point offer wildflower displays, solitude, and sweeping views of the bay, while bird watching at Mountain Lake has become a valued visitor experience. These and other open spaces create opportunities for visitors to explore the now scarce natural systems of the San Francisco region, as well as to participate in the restoration of those systems.

3.4.6 PUBLIC SAFETY

LAW ENFORCEMENT

Law enforcement services at the Presidio are provided by the U.S. Park Police (USPP) San Francisco Field Office (SFFO). At present, the USPP has an

authorized strength of 83 sworn law enforcement positions, and 33 of these authorized positions are dedicated to the Presidio. In the beginning of Fiscal Year 2001, 6 of the 33 positions were vacant.

USPP law enforcement functions include vehicle patrol, motorcycle patrol, foot patrol, horse-mounted patrol, bicycle and trail bike patrol, search and rescue, emergency medical service support, traffic safety, criminal investigations, narcotics enforcement, dispatch, emergency communications, and administrative support. Emergency calls at the Presidio have an average response time of less than three minutes, while the non-emergency response time is less than ten minutes. The Trust area of the Presidio (Area B) is divided into two beats patrolled 24 hours a day, typically each patrol beat with two patrol cars with a single officer. Currently there is no police station available 24 hours a day, only a dispatch center that can be called via 911 to report incidents.

Between March 2000 and 2001, the USPP responded to 6,452 incidents in the Presidio (including Area B and some of Area A). Approximately 15.5 percent of these incidents were classified as "selective enforcement," which mainly include responses to citizen complaints for parking violations. An additional 10.0 percent of incidents were responses to false security alarms in Presidio buildings, and 9.7 percent of incidents were routine security checks through Presidio properties.

To augment USPP in special or unusual circumstances, the USPP has entered into a mutual aid agreement with the San Francisco Police Department (SFPD) whereby assistance will be provided by SFPD law enforcement personnel at the request of the USPP. However, since the USPP has exclusive federal jurisdiction at the Presidio, neither the San Francisco Police Department nor the California State Police have the statutory authority to lead law enforcement operations at the Presidio, including response to dangerous and volatile emergency calls (e.g., workplace or domestic violence, a hostage situation) requiring a special weapons and tactics (SWAT) team. While the SFPD would provide back up assistance under its mutual aid agreement with the USPP, the expectation by the SFPD is that the USPP will maintain first response SWAT team capabilities.

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In Fiscal Year 2001, the USPP budgeted \$3,463,000 for Presidio related operations. Approximately 90 percent of the budget was for total personnel costs (sworn officers, civilians, and overtime expenses), including funding dedicated for vacant positions. Area A of the Presidio is part of Bayside division. This division has a \$4.167 million budget with 46 FTE officers additional plus special programs revenue. Additionally, there are 6 law enforcement rangers that patrol Area A from 8 a.m. to 4 p.m.

Pursuant to an Interagency Agreement with NPS, the Trust will make a payment of \$5.95 million in Fiscal Year 2001 to the NPS as reimbursement of NPS's costs of providing law enforcement fire and safety services. Approximately \$3,463,000 of this payment is designated for law enforcement services, representing one hundred percent of Presidio-related operations. Additionally, the Trust will reimburse NPS by approximately \$190,000 toward the operation of a communications/dispatch center that supports both fire protection and law enforcement functions at the Presidio.

FIRE PROTECTION AND EMERGENCY RESPONSE

Fire protection and emergency medical services at the Presidio are provided by the NPS's Presidio Fire Department. The response area for Fire Station 1, located on the Main Post, encompasses the Presidio, upper and lower Fort Mason, and the North District of GGNRA (Fort Baker, Fort Barry, Fort Cronkhite). Fire and emergency medical calls at the Presidio have an average response time of less than three minutes. In addition, the Presidio Fire Department staffs Fire Station 2 in the Marin Headlands on a 24-hour basis. The response area for Fire Station 2 is Fort Cronkhite, Fort Barry, and Fort Baker. Station 2 provides secondary response on the Presidio as well. The Presidio Fire Department plans to move Fire Station 2 to East Fort Baker to better serve the proposed conference center and for a more central location in the areas the station serves in Marin. Current staffing levels of 6 would increase by 7 to 8 firefighters. Presidio Fire Department equipment includes 3 fire trucks, 1 quint fire truck (ladder truck with pumper), and 1 ambulance. The Presidio Fire Department has 42 authorized fire fighter positions.

To augment Presidio Fire Department forces in special or unusual circumstances, the NPS has entered into a mutual aid agreement with the San

Francisco Fire Department (SFFD) whereby assistance will be provided by SFFD personnel at the request of the Presidio Fire Department.

In Fiscal Year 2001, the total budget for the Presidio Fire Department is approximately \$3.1 million. Approximately \$2.3 million of the budget or 75 percent is supported by payments from the Trust to reimburse NPS for its costs of services pursuant to an Interagency Agreement for fire prevention and suppression services. Additionally, the Trust contributes approximately \$190,000 to the operation of a communications/dispatch center that supports both fire protection and law enforcement functions at the Presidio.

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Transportation and Circulation

3.5 TRANSPORTATION AND CIRCULATION

This section describes existing transportation conditions within and in the vicinity of the Presidio in San Francisco. This assessment is based in part on the *Presidio Transportation Planning and Analysis Technical Report*, July 1994, *The Presidio Traffic Update Report of Findings*, December 1996 and the *Presidio Bus Management Plan*, September 1998. In addition, the information obtained from these reports was supplemented and updated with new traffic, transit, and parking data collected specifically for this study. The following are the components of the transportation system that are addressed in this section:

- Roadway Network,
- Traffic Characteristics,
- Transit Services,
- Bicycle and Pedestrian Circulation, and
- Parking.

3.5.1 ROADWAY NETWORK

The Presidio of San Francisco is located in the northwest corner of San Francisco, with roadways connecting to the Marina and Cow Hollow neighborhoods to the east and the Richmond, Sea Cliff and Presidio Heights neighborhoods to the south. All of the intersections within the Presidio, as well as those connecting the Presidio with the rest of the City, are either two-way or all-way STOP controlled. The nearest signalized intersections to the Presidio are just outside the Marina Boulevard and Gorgas Avenue gates. The key roadways within and near the Presidio are shown in Figure 29 and described below.

Lincoln Boulevard - Lincoln Boulevard runs generally east-west in the eastern portion of the Presidio and north-south in its western portion, and serves as the primary thoroughfare in the Presidio. It begins at the intersection of Presidio Boulevard/Leiterman Drive and ends at the intersection of 25th Avenue/El Camino del Mar. Lincoln Boulevard contains two lanes each way between Torney Avenue and Montgomery Street, and one lane each way west to El Camino del Mar.

Presidio Boulevard - Presidio Boulevard has one lane each way, and begins at Funston Avenue in the Main Post Planning District, connects to Lincoln Boulevard/Leiterman Drive near the Leiterman Planning District, and continues north-south in the eastern portion to the southern boundary where it becomes Presidio Avenue in San Francisco.

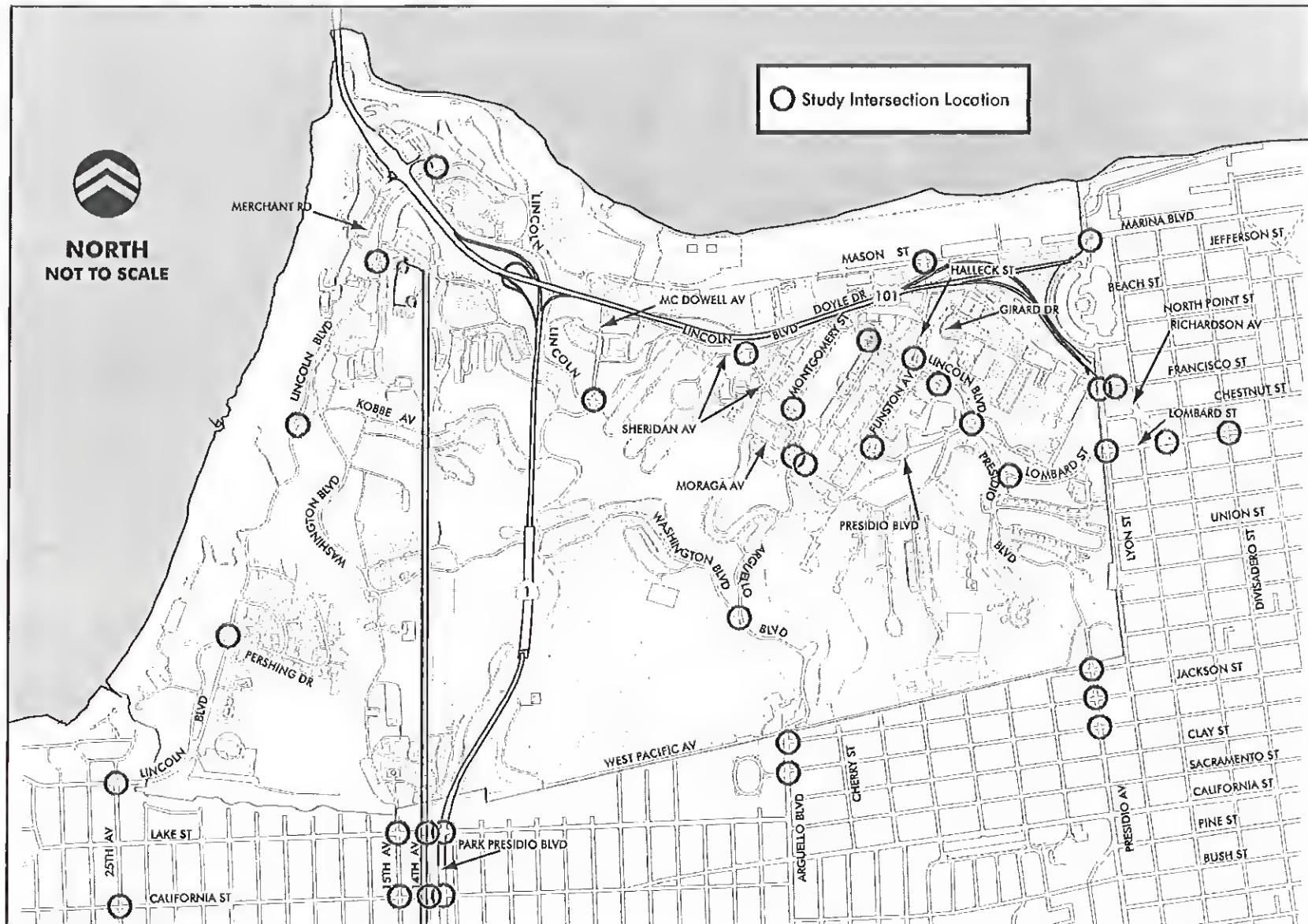
Mason Street - Mason Street provides east-west access through the Crissy Field Planning District along the Presidio's north coast. Mason Street connects to Marina Boulevard and Doyle Drive at the Presidio's northeast gate. At its western terminus, Mason Street indirectly connects to Lincoln Boulevard by way of two minor roadways (Crissy Field Avenue and McDowell Avenue). Mason Street at the northeast gate has one through lane and one right-turn only lane on in the eastbound direction, and one lane in the westbound direction.

Gorgas Avenue - Gorgas Avenue provides east-west access on the northeast side of the Presidio. It connects with U.S. Highway 101 and Lyon Street at an eastern gateway and provides access to Crissy Field via Halleck and Marshall Streets at its western terminus. Although Gorgas Avenue is wider west of General Kennedy Avenue, it only has one lane each way. The roadway narrows east of General Kennedy Avenue, but has an additional two eastbound lanes and one westbound lane.

Lombard Street - Lombard Street runs east-west from its intersection with Presidio Boulevard near the Leiterman Planning District, and extends into San Francisco to the east. Lombard Street has one lane each way. It serves as the primary gateway to the eastern portion of the Presidio. *U.S. Highway 101* - U.S. Highway 101 near the Presidio is composed of the southern Golden Gate Bridge approach, Doyle Drive, Richardson Avenue, and Lombard Street (from Richardson Avenue south). Doyle Drive runs generally east-west through the northern portion of the Presidio before becoming Richardson Avenue. Richardson Avenue generally has three lanes in each direction and runs diagonally (northwest – southeast) from Doyle Drive until it merges with Lombard Street about two blocks east of the Presidio's eastern boundary. U.S. Highway 101 carries the majority of the east-west traffic between the Golden Gate Bridge and areas outside the Presidio. Although it connects with most intersecting streets in the city, the only connection to roadways within the

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Source: Wilbur Smith Associates, 2001, and Robert Peccia and Associates, 1996

Figure 29: PTMP EIS Study Intersections

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Presidio is at the Golden Gate viewing area near the Golden Gate bridge. Near the eastern boundary of the Presidio, U.S. Highway 101 intersects with Francisco Street just outside the Gorgas Avenue gate.

Arguello Boulevard - Arguello Boulevard has one lane each way, and runs north-south from its intersection with Moraga Avenue in the Main Post, extending south through the Presidio's southern boundary. It serves as a gateway to the Richmond district of San Francisco.

Washington Boulevard - Washington Boulevard is primarily a residential street with one lane each way. It runs east-west from its intersection with Lincoln Boulevard at the western edge of the Presidio and extends eastward to Arguello Boulevard.

Park Boulevard - Park Boulevard is a connecting arterial with one lane each way. It runs north-south from its intersection with Lincoln Boulevard and extends southward to intersect with Washington Boulevard.

Kobbe Avenue - Kobbe Avenue has one lane each way, and runs east-west from its intersection with Lincoln Boulevard at the western edge of the Presidio to its intersection with Park Boulevard. Although it is primarily a residential street, Kobbe Avenue provides east-west access into the Fort Scott Planning District within the Presidio.

15th Avenue/Wedemeyer Street/Battery Caulfield Road - Fifteenth Avenue provides access to the Richmond district of San Francisco. Fifteenth Avenue is a predominantly residential street outside the Presidio. It becomes Battery Caulfield Road just inside the Presidio's boundary in the vicinity of the Public Health Service Hospital (PHSH). Battery Caulfield Road is a north-south roadway with one lane each way that connects the PHSH Planning District to Washington Boulevard.

14th Avenue - Fourteenth Avenue is a former automobile entrance that now provides pedestrian and bicycle access to the Presidio.

TRAFFIC CHARACTERISTICS

Gateway Traffic

As part of the *Presidio Bus Management Plan* study, 24-hour machine traffic counts were conducted at the nine Presidio gates during the second week of May (spring conditions), the first week of August (summer conditions), and the third week of November (fall conditions) in 1998. Table 27 provides a summary of daily traffic volumes at each gate on the average weekday, as well as the peak hour traffic volumes for a weekday.

The data indicate that, on a daily basis, the gate with the highest weekday traffic volumes during both the spring and summer is the Lombard Gate, with 21 percent and 23 percent of total gate traffic, respectively. A similar relationship applies to the peak hour conditions for weekday and weekend days. Peak hour weekday gateway volumes collected in November and December of 2000 for this study indicate a similar number of vehicles entering and exiting the Presidio today compared to that observed in the spring and summer of 1998. As shown in Table 28, a total of 5,967 vehicles were observed at the Presidio's gateways during the weekday p.m. peak hour, with the greatest percentage of traffic (21 percent) traveling through the Lombard Street gateway. The 25th Avenue/El Camino del Mar, Presidio Avenue and Arguello Boulevard gateways accommodated most of the remaining traffic, with 18 percent, 17 percent and 14 percent of the p.m. peak hour daily traffic, respectively.

The 1998 daily traffic volumes of 63,000 to 67,000 at the gates represent an increase in volumes from 1996 when the Presidio was largely vacant, and to a lesser extent, from 1991 conditions, when the Army still occupied much of the Presidio. In 1996 the average weekday traffic volume was 48,800 vehicles per day, while the average weekday traffic volume in 1991 was 58,000 vehicles. The total weekday traffic volume through the Presidio gates in 1988 was 52,630 vehicles per day (CH2M Hill 1989). The increase in traffic volumes between 1996 and 1998 is due to increased occupancy and use of buildings at the Presidio and an increase in the amount of through traffic. Currently, city streets just beyond the 15th Avenue, 25th Avenue, Gorgas Avenue and Marina Boulevard gates have restrictions on heavy vehicles (3 tons) and/or tour buses. These restrictions have been accounted for in the analysis of AM peak hour and PM peak hour traffic conditions.

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Table 27: Presidio Gateways Traffic Volume Summary Weekday Average Daily and PM Peak Hour Volumes (1998)

Gate	Weekday Average Daily						Weekday Peak Hour					
	Spring		Summer		Fall		Spring		Summer		Fall	
	ADT	Percent of Total	ADT	Percent of Total	ADT	Percent of Total	vph	Percent of Total	vph	Percent of Total	vph	Percent of Total
Mason St.	5,313	8%	6,095	9%	4,251	7%	509	9%	575	9%	412	7%
Gorgas Ave.	2,357	4%	2,267	3%	2,059	3%	211	4%	279	5%	186	3%
Lombard St.	13,500	21%	15,631	23%	13,084	21%	1,110	19%	1,256	21%	1,102	19%
Presidio Ave.	11,501	18%	9,591	14%	13,848	22%	1,012	17%	838	14%	1,255	22%
Arguello Blvd.	6,234	9%	7,418	11%	6,893	11%	608	10%	711	11%	700	12%
15th Ave.	864	1%	783	1%	920	1%	82	1%	75	1%	93	2%
Lincoln Blvd./25th Ave.	9,771	15%	9,414	14%	8,785	14%	904	16%	962	16%	821	14%
Plaza West	8,387	13%	8,470	13%	6,570	10%	660	11%	592	10%	493	9%
Plaza East	6,923	11%	8,057	12%	6,757	11%	771	13%	778	13%	705	12%
Total	64,850	100%	67,726	100%	63,167	100%	5,867	100%	6,066	100%	5,767	100%

Source: Presidio Bus Management Plan-Support Document: Summary and Analysis of Data Collected in 1998, September 1999.

Notes:

ADT = Average Daily Traffic

vph = vehicles per hour

Traffic volumes include both entering and exiting volumes at the gates.

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Transportation and Circulation

**Table 28: Presidio Gateways Traffic Volume Summary
Weekday PM Peak Hour Volumes (2000)**

Gate	November/December Vehicles per Hour	Percent of Total
Mason St.	456	8%
Gorgas Ave.	196	3%
Lombard St.	1,260	21%
Presidio Ave.	1,002	17%
Arguello Blvd.	815	14%
15th Ave.	107	2%
Lincoln Blvd./25th Ave.	1,072	18%
Plaza West	325	5%
Plaza East	734	12%
Total	5,967	100%

Source: Wilbur Smith Associates, 2000.

Notes:

Traffic volumes include both entering and exiting volumes at the gates.

Seasonal Variation

Estimates of seasonal variation of traffic within the Presidio were calculated and documented in the Presidio Traffic Analysis (Peccia 1992). Additional seasonal traffic count data were collected in 1998 and 2000. Weekday traffic volumes in the Presidio are primarily work-related, so they do not vary significantly by season, unlike weekend traffic, which is primarily recreational. Counts in 1998 indicate that weekday traffic volumes were between 63,000 and 67,000 throughout the year, while weekend traffic ranged from 58,000 in the fall to 75,000 in the summer. Weekday p.m. peak hour traffic volumes include even more work-related trips than weekday daily traffic volumes, and therefore vary the least amount by season.

The San Francisco County Transportation Authority (SFCTA) conducted peak hour traffic counts at Presidio gate intersections in May 2000 as part of their

effort to develop a Citywide travel demand forecasting model. A comparison of p.m. peak hour counts made at a small number of intersections in December 2000 by Wilbur Smith Associates and the SFCTA p.m. peak hour counts made in May, 2000 indicate that the December counts were generally 10 to 28 percent less than the counts made in May. In order to account for the seasonal variation in traffic volumes, the intersection turning movement counts conducted in the winter of 2000 for the purposes of this analysis were adjusted upward by 15 percent to represent an average weekday in the peak season.

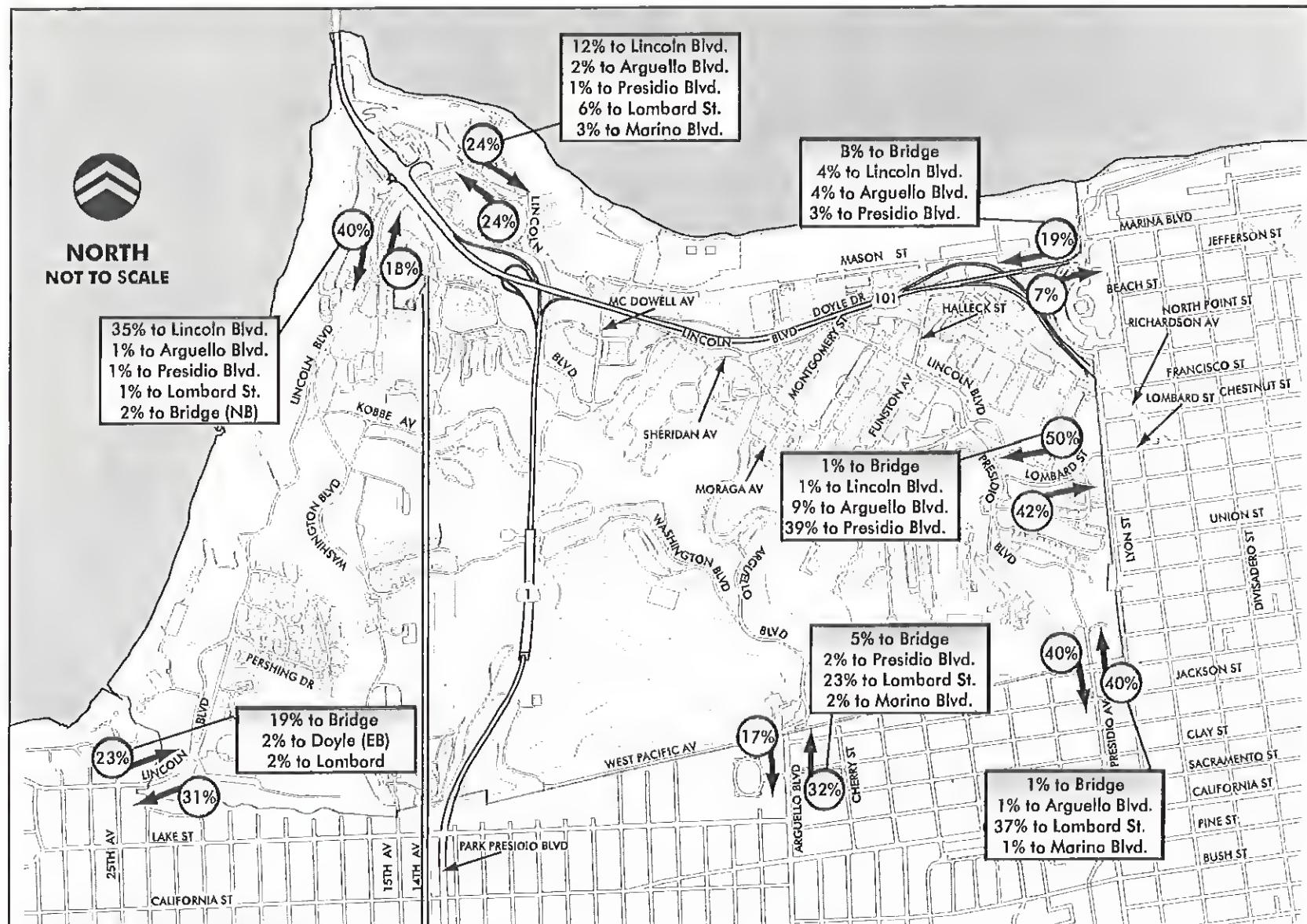
Through Traffic

According to origin/destination survey data collected in 1996, the Presidio's seven major entrances (not including 15th Avenue and Gorgas Avenue) carry significant pass-through traffic (Peccia 1996). Pass-through traffic was defined as any vehicle that moved through the Presidio in ten minutes or less. As shown in Figure 30, the study indicated that Lombard Street and Presidio Boulevard have the highest pass-through percentages, with the majority of their pass-through traffic moving between these two gateways. On weekdays, 50 percent of the traffic at the Lombard Street entrance is pass-through, with 78 percent of this traffic destined to Presidio Boulevard. At the Presidio Avenue entrance, 39 percent of the traffic is pass-through, with 95 percent destined to Lombard Street. The 1996 *Traffic Update* supported the conclusion from the 1991 analysis that this route may be used by motorists to bypass difficult street patterns and terrain southeast of the park. Arguello Boulevard also had a notable percentage of travel through the Lombard Street gateway, presumably for the same reason.

The Lincoln Boulevard entrance (at 25th Avenue and El Camino Del Mar) had the next highest pass-through percentages, with most of its through trips either entering or leaving at the Merchant Road and Golden Gate Viewing Plaza entrances. The data show that this is a primary pass-through route to the bridge.

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Source: Wilbur Smith Associates, 2001, and Robert Peccio and Associates, 1996.

Figure 30: Pass-through Traffic Percentages – Weekday, July 1996

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Marina Boulevard also serves as a pass-through route to the bridge, primarily in the westbound direction. It is assumed that this route is used as a bypass to Doyle Drive westbound. Very few eastbound pass-through trips were observed, presumably because Presidio roadways in the eastbound direction are much less convenient.

Intersection Analysis

A total of 37 intersections were selected as study intersections for the analysis, as shown in Figure 29. These intersections represent key access points to the Presidio and/or are key intersections internal to the Presidio roadway network. These intersections most likely would experience the greatest increase in traffic volume due to the proposed alternatives being evaluated in this study. The study intersections include:

1. Lombard/Richardson
2. Lyon/Lombard
3. Francisco/Richardson
4. Gorgas/Lyon/Francisco
5. Doyle/Marina/Lyon
6. Mason/Marina/Lyon
7. Lincoln/Halleck
8. Presidio/Funston
9. Letterman/Presidio/Lincoln
10. Lombard/Presidio
11. Presidio/Pacific
12. Arguello/Jackson
13. Washington/Arguello
14. Arguello/Moraga
15. Graham/Moraga
16. Sheridan/Montgomery
17. Lincoln/Sheridan
18. Lincoln/Park/McDowell
19. 14th/Lake
20. 15th/Lake
21. Lincoln/25th/El Camino del Mar

22. Lincoln/Bowley/Pershing
23. Lincoln/Kobbe
24. Lincoln/Merchant
25. Lincoln/Storey
26. Lincoln/GGB Viewing Area
27. Lincoln/Graham
28. Divisadero/Lombard
29. Park Presidio/Lake
30. Park Presidio/California
31. 14th/California
32. 15th/California
33. 25th/California
34. Presidio/Jackson
35. Presidio/Washington
36. Arguello/Washington
37. Lincoln/Girard

The turning movement traffic volumes at the study intersections numbered 1-33 were counted during the morning and afternoon peak commute periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) in May 2000 and November and December 2000. Intersections numbered 34-37 were counted in February 2002. The peak hour total intersection traffic volume during each two-hour period was determined for each intersection to be used for the intersection capacity analysis. In order to account for the seasonal variation in traffic volumes, the intersection turning movement counts conducted in the winter of 2000 for the purposes of this analysis were adjusted upward by 15 percent.

The a.m. and p.m. peak hour intersection operations analysis was conducted according to the methodology described in the 1994 Highway Capacity Manual (HCM) (Transportation Research Board 1994). The HCM methodology calculates the average delay experienced by a vehicle traveling through the intersection, and assigns a corresponding level of service (LOS). The levels of service range from LOS A, indicating volumes well below capacity with vehicles experiencing little or no delay, to LOS F, indicating volumes near capacity with vehicles experiencing extremely high delays. An

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intersection operating at LOS D or better is generally considered to be operating acceptably. Levels of service E and F are undesirable and generally considered unacceptable.

The HCM provides different methodologies and level of service criteria for signalized and unsignalized intersections. Levels of service for signalized intersections are based on the weighted average delay per vehicle for all vehicles approaching the intersection. Because a signal regulates the flow of traffic through the intersection from all approaches, the operation of any one traffic movement is directly related to other traffic movements through the intersection. Therefore, a single level of service accurately represents the operation of the intersection overall.

At unsignalized intersections, the compatible traffic turning movements are not coordinated to occur simultaneously; therefore, the delay experienced by the traffic on any one approach could be quite different from that of any other approach. At two-way STOP-sign controlled intersections, traffic on the uncontrolled (major) approaches does not stop, therefore, it incurs very little delay. Traffic on the stop-controlled (minor) approaches must wait for a gap in traffic flow before entering the intersection. Therefore, delay for traffic on the minor approaches depends on the traffic volumes on the major approaches. Consequently, for two-way STOP-sign controlled intersections, although the average delay per vehicle for the entire intersection is provided in the tables, the level of service provided is for the worst approach, in order to indicate the range of operation of each approach.

Table 29 presents the existing LOS for the 37 study intersections for both the a.m. peak hour and p.m. peak hour. All of the intersections internal to the Presidio operate acceptably (LOS D or better) during both the a.m. and p.m. peak hours. The two study intersections that do not currently operate at an acceptable LOS are Lombard and Lyon Streets, which operates at LOS E during the a.m. peak hour, and Park Presidio Boulevard and California Street, which operates at LOS E during the p.m. peak hour.

Table 29: Intersection LOS Operating Conditions: Existing (2000) AM and PM Peak Hour Conditions

Intersection	Control Device	AM Peak Hour LOS	PM Peak Hour LOS
1. Lombard/Richardson	Traffic Signal	A	A
2. Lyon/Lombard	All-way STOP	E	D
3. Francisco/Richardson	Traffic Signal	B	B
4. Gorgas/Lyon/Francisco (a)	All-way STOP	B	B
5. Doyle/Marina/Lyon	Traffic Signal	A	B
6. Mason/Marina/Lyon (b)	One-way STOP	A	B
7. Lincoln/Halleck	Two-way STOP	B	B
8. Presidio/Funston	All-way STOP	A	A
9. Letterman/Presidio/Lincoln	All-way STOP	A	A
10. Lombard/Presidio	All-way STOP	D	D
11. Presidio/Pacific	All-way STOP	B	B
12. Arguello/Jackson	All-way STOP	B	C
13. Washington/Arguello	Two-way STOP	A	A
14. Arguello/Moraga	Two-way STOP	A	B
15. Graham/Moraga	Two-way STOP	A	A
16. Sheridan/Montgomery	All-way STOP	A	A
17. Lincoln/Sheridan	Two-way STOP	B	B
18. Lincoln/Park/McDowell	Two-way STOP	B	B
19. 14th/Lake	Two-way STOP	C	C
20. 15th/Lake	All-way STOP	B	B
21. Lincoln/25th/El Camino del Mar	All-way STOP	D	D
22. Lincoln/Bowley/Pershing	Two-way STOP	C	C
23. Lincoln/Kobbe	Two-way STOP	C	C
24. Lincoln/Merchant	Two-way STOP	A	C
25. Lincoln/Storey	Two-way STOP	B	B
26. Lincoln/GGB Viewing Area	Two-way STOP	C	C
27. Lincoln/Graham	All-way STOP	B	A
28. Divisadero/Lombard	Traffic Signal	B	B
29. Park Presidio/Lake	Traffic Signal	B	C
30. Park Presidio/California	Traffic Signal	B	E
31. 14th/California	Two-way STOP	C	D
32. 15th/California	Two-way STOP	C	C
33. 25th/California	Traffic Signal	B	B
34. Presidio/Jackson	Traffic Signal	B	C
35. Presidio/Washington	Traffic Signal	C	C
36. Arguello/Washington	Traffic Signal	C	B
37. Lincoln/Girard	Two-way STOP	B	B

Source: Wilbur Smith Associates, January 2001.

Note: For two-way STOP-controlled intersections, the LOS is presented for the worst approach.

(a) Three of four approaches stop. The Lyon Street approach does not stop.

(b) Of the three approaches, only the Lyon Street approach stops.

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The intersection of Marina Boulevard/Mason Street/Lyon Street/Doyle Drive has five approaches and two different types of control devices; therefore, it was analyzed as two separate but adjacent intersections. The intersection of Marina Boulevard/Mason Street and Lyon Street is an unsignalized intersection that carries relatively low volumes of traffic, which is metered by the adjacent traffic signal. Therefore, the intersection operates well during both the morning and afternoon peak commute periods. The adjacent intersection of Marina Boulevard/Doyle Drive and Lyon Street is controlled by a semi-actuated traffic signal activated by vehicles on the Lyon Street approaches, with relatively low volumes of traffic on the Lyon Street approach, allowing it to operate well also.

The intersection of Richardson Avenue, Lyon Street, Francisco Street, and Gorgas Avenue was analyzed as two separate adjacent intersections: the signalized intersection of Richardson Avenue and Francisco Street, and the STOP-sign controlled intersection of Francisco Street/Gorgas Avenue and Lyon Street. Both of the intersections operate at LOS B during both the a.m. and p.m. peak hours. Although the geometric configuration of this intersection could be confusing to drivers, the traffic on Francisco Street is minimal and requires only a small portion of the signal cycle time, allowing the traffic signal to operate efficiently. The traffic volumes traveling through the intersection of Francisco Street, Lyon Street, and Gorgas Avenue are relatively light, and are served adequately by the three-way STOP-sign control device.

The all-way STOP-sign controlled intersection of Lyon and Lombard Streets is the only gateway intersection that does not operate acceptably during the a.m. or p.m. peak hour. During the p.m. peak hour, the intersection operates acceptably at LOS D, but during the a.m. peak hour, due to substantially more traffic entering the Presidio through the Lombard Street gate than in the afternoon peak hour, the intersection operates at LOS E.

3.5.2 TRANSIT SERVICES

Public transit systems serving the Presidio include the San Francisco Municipal Railway (Muni) and the Golden Gate Bridge, Highway and Transportation District (Golden Gate, Transit or GGT). These services provide access to other regional carriers such as BART, AC Transit, CalTrain,

SamTrans, and the regional ferry system. PresidiGo, the Presidio's internal shuttle service provides service throughout the park and provides connections to Muni routes just outside the Presidio gates. In addition, there are private transit carriers that accommodate specific needs not served by the public systems.

Muni

Muni provides regular scheduled daily transit service directly to the Presidio on four routes (28-19th Avenue, 29-Sunset, 43-Masonic and 82X-Presidio and Wharves Express), as well as to the adjacent neighborhoods near Presidio gates on another eight routes (1-California, 1AX-California "A" Express, 1BX-California "B" Express, 3-Jackson, 30-Stockton, 30X-Marina Express, 33-Stanyan, 41-Union and 45-Union-Stockton), as shown in Figure 31. Table 30 presents the Muni bus lines serving the Presidio or its immediately adjacent neighborhoods, including route descriptions and the weekday a.m. and p.m. peak period headways.

The northeastern portion of the Presidio has the most extensive transit service in the Park with convenient stops for the 29-Sunset, 43-Masonic, and 82X-Presidio and Wharves Express at the Main Post and/or Letterman Planning Districts. The 29-Sunset also provides direct transit service to the western portion of the Park, with stops along Lincoln Boulevard between 25th Avenue and the Golden Gate Bridge Toll Plaza. Buses on the 43-Masonic stop at Letterman and East Housing while traveling between the Lombard Street and Presidio Boulevard gates. The 28-19th Avenue route stops at the Golden Gate Bridge Toll Plaza within the Presidio, but also serves the Letterman Planning District with a stop on Richardson Avenue at Francisco Street. The 82X-Presidio Wharves Express, which provides peak hour service in the commute direction only, enters and exits the Presidio via Lombard Street, and serves the Main Post and Letterman Planning Districts with stops on Anza Avenue at Lincoln Boulevard, Lincoln Boulevard just east of Funston Avenue, and Letterman Drive.

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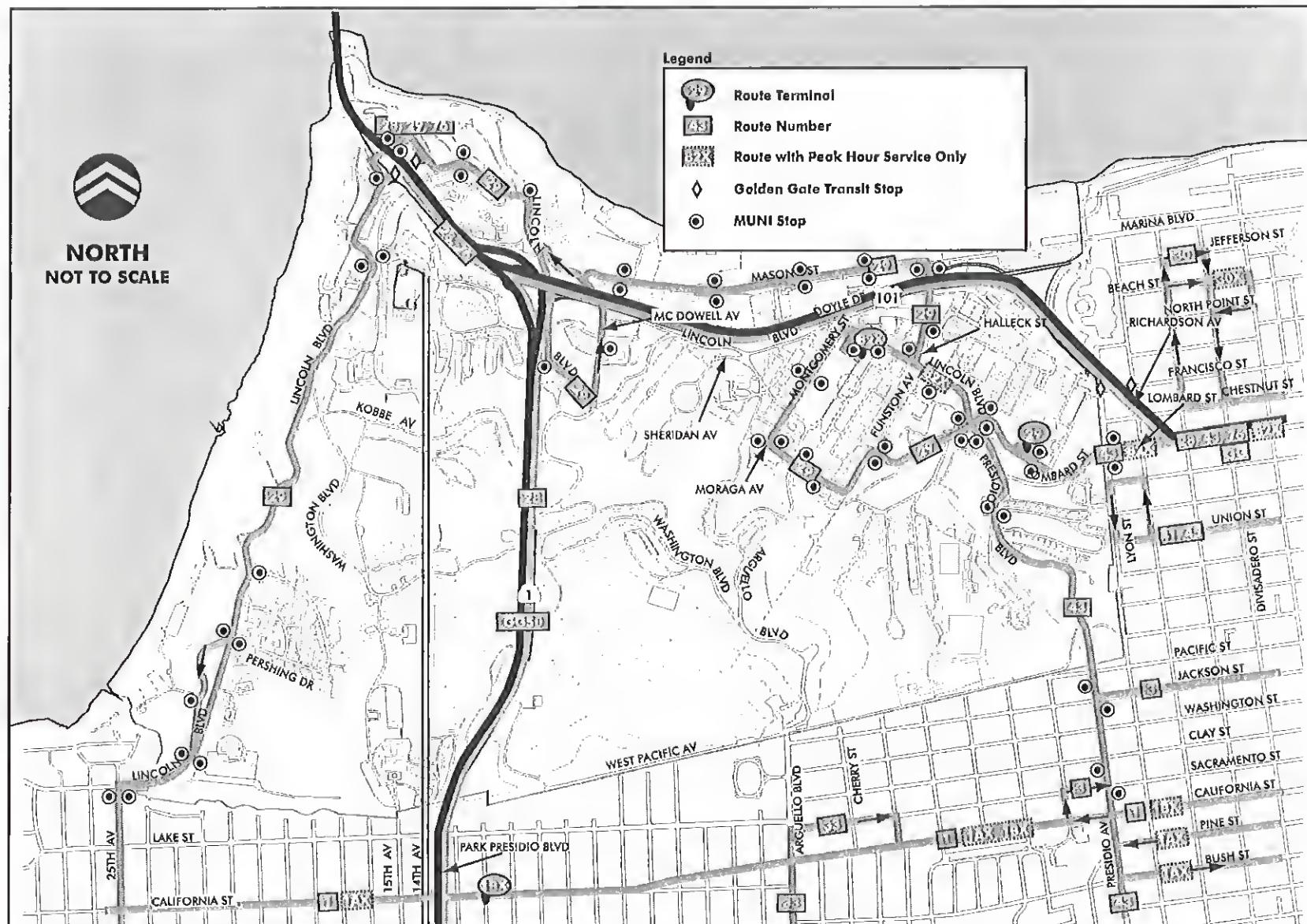


Figure 31: Existing Transit Routes Serving the Presidio Area

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Table 30: Nearby Muni Transit Lines

Muni Route	Description	AM/PM Peak Period Schedule Headway
1-California	Daily route connecting Outer Richmond area (Geary/33rd Ave.) through the Financial District to the Embarcadero BART/Muni station to Howard/Main, near the Transbay Terminal.	9/8 minutes
1AX-California 'A' Express	Weekday peak periods peak direction only service connecting Geary/33rd Ave. to Davis/Pine in the morning and Davis/Pine to 33rd Ave./Geary in the afternoon.	10/15 minutes
1BX-California 'B' Express	Weekday peak periods peak direction only service connecting California/12th Ave. to Davis/Pine in the morning, and Davis/Pine to Park Presidio Blvd./California St. in the afternoon.	6/15 minutes
3-Jackson	Daily route connecting Presidio Heights to the Financial District (Sansome/Sulter).	10/10 minutes
28-19th Avenue	Daily route connecting Daly City BART Station to Highway 101 via 19th Avenue and Park Presidio Boulevard.	11/12 minutes
29-Sunset	Daily route connecting the Presidio to the Bayview area primarily via 25th/Sunset Avenue. Provides a connection to Golden Gate Transit at Golden Gate Bridge Plaza.	30/30 minutes
30-Stockton	Daily route connecting Marina District (Broderick/Beach Streets) to the Caltrain Station (4th St./Townsend St.).	4/5 minutes
30X-Marina Express	Weekday peak period peak - direction only service connecting the Marina District (Beach/Divisadero) to the Financial District, the Embarcadero Muni/BART station, and terminating at Howard/Beale near the Transbay Terminal in the morning. Afternoon service connects Howard/Embarcadero to Broderick/Jefferson.	5/10 minutes
33-Stanyan	Daily route connecting Laurel Heights and the Mission District via Arguello, Stanyan, Clayton, 18th Street, and Potrero.	15/15 minutes
41-Union	Weekday peak periods only connecting Greenwich/ Lyon with downtown San Francisco.	10/6 minutes
43-Masonic	Daily route connecting the Marina District to the Excelsior District via Lombard, Presidio and Masonic Streets.	15/10 minutes
45-Union/Stockton	Daily local route connecting Greenwich/Lyon with Caltrain Depot at 4th/Townsend.	8/8 minutes
76-Marin Headlands	Sundays only and some holidays.	60 minutes
82X-Presidio and Wharves Express	Weekday peak periods, peak direction only connecting Leltzman and Main Post with the Caltrain Depot.	29/25 minutes

Source: Muni 2000 Schedule.

Lines 41-Union and 45-Union-Stockton provide service to the corner of Greenwich and Lyon Streets just outside the Lombard Street gate. Lines 30-Stockton and 30X-Marina Express serve the Marina neighborhood, and are within two to three blocks of the Gorgas Avenue gate and Mason Street gate. The 1-California and 1AX/1BX-California Expresses run along California Street, and are within two blocks of the 15th Avenue and the 25th Avenue gates. The 33-Stanyan runs on Arguello Boulevard, connecting with the Mission neighborhood and is within three blocks of the Arguello gate. The 3-Jackson line runs along Jackson Street and Presidio Avenue, stopping one block from the Presidio Boulevard gate. In addition to these weekday services, route 76-Marin Headlands is a Sunday- and Holiday-only service that runs from downtown, stops at the intersection of Richardson Avenue and

Francisco Street and Golden Gate Plaza, and then continues north to the Marin Headlands.

Recent ridership data on the number of passengers boarding or alighting from a bus within the Presidio are not available from Muni. However, visual observation of current passenger loads in the vicinity of the Presidio indicates low ridership with substantial excess capacity (Wilbur Smith Associates 2000). The Trust monitored bus operations and ridership for the 82X-Presidio and Wharves Express route within the Presidio in July 2000. The monitoring data indicate 16 passengers and 23 passengers on board 82X-Presidio and Wharves Express buses during the a.m. peak hour and p.m. peak hour, respectively. Current transit ridership within the Presidio is low for a number of reasons. The Presidio currently has free parking, and a substantial portion

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of existing buildings within the Presidio are currently vacant, which yields a substantial surplus of available parking spaces. Also, many buses serving the Presidio either begin or end their runs at or near the Presidio or operate in a reverse commute direction. Access to bus connections just outside the Presidio was limited until Presidio shuttle service became fully operational.

Recent ridership data are available for each line's maximum load point, defined as the location along the route at which the highest level of ridership typically occurs. In all instances, the maximum load point occurs at a substantial distance from the Presidio. Table 31 presents the maximum load points for the various bus lines serving the Presidio or its adjacent neighborhoods, during the a.m. and p.m. peak commute periods. Table 31 indicates that the Muni lines serving the Presidio area are well-used at their respective maximum load points, but that many of the Muni lines directly serving the Presidio have available capacity.

Golden Gate Transit

Golden Gate Transit operates bus lines and ferry routes between San Francisco and counties in the Golden Gate corridor of Marin and Sonoma Counties. Twenty-six of their bus lines pass through the Presidio during the a.m. and p.m. peak hours, all stopping at the Golden Gate Bridge Plaza. All transbay lines but one (Route 50) proceed into San Francisco on U. S. Highway 101, with a stop at the corner of Richardson Avenue and Francisco Street. Although ridership data are not available by bus stop, previous observations indicate that few passengers were originating or terminating their trips in the Presidio (Wilbur Smith Associates 2000).

Peak hour transbay service ridership data collected in October 2000 provided by GGT are presented in Table 32. The ridership data presented in Table 32 represent the average passenger load at the Golden Gate Bridge Plaza during the peak hour by route. The data indicate that in general, GGT buses operate with excess capacity during both the a.m. and p.m. peak commute hours, with the overall peak hour load factor being highest for the typical commute directions (southbound in the morning and northbound in the afternoon). The average a.m. peak hour load factor in the southbound direction is 75 percent, and the average p.m. peak hour load factor in the northbound direction is 67 percent. As shown in Table 32, these load factors are an average across all

transbay GGT routes operating during the morning and afternoon peak hours. Certain routes are more heavily used than others; five GGT routes have average a.m. peak hour load factors of 90 percent or higher. In addition, some buses within the peak hours are more crowded than others.

PresiGo Internal Shuttle Service

Internal shuttle service began operating in the Presidio in July 2001. The shuttle service serves the entire Presidio with frequent stops in all seven planning districts of the park. Clean fuel buses connect residential area commercial areas, and visitor destinations within the park, as well as key transfer points to Muni and Golden Gate Transit buses. Shuttle service is provided on three routes, each with a frequency of 30 minutes. The Blue and Orange routes provide service on weekdays and weekends, with redundant service between the Main Post and the Lombard gate. The Green route provides service every 30 minutes between the Golden Gate Bridge Plaza and the Arguello gate during peak commute periods on weekdays.

Tour Buses and Charter Services

On a typical summer weekday, 180 non-Muni tour buses carry visitors to and from Presidio attractions such as the Golden Gate Bridge Plaza, Fort Point, and the Visitor Center on the Main Post. The Golden Gate Bridge is the primary attraction. They also stop at several scenic overlooks along the 49-mile drive (Peccia 1999). During the spring and fall seasons, about 210 and 220 non- Muni tour buses enter the Presidio on a typical weekday. No formal passenger count data are available to determine the amount of service provided.

3.5.3 BICYCLE AND PEDESTRIAN CIRCULATION

The Presidio does not have a continuous system of sidewalks, bicycle trails and bicycle lanes. Sidewalks and marked pedestrian crossings are provided sporadically throughout the Presidio. In many cases within the Presidio, pedestrians and bicyclists must mix with vehicles on the street system to move from one area to another.

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Table 31: Existing Muni Passenger Loads

Muni Line	Direction	Maximum Load Point	AM Peak Hour			PM Peak Hour		
			Peak Hour Load	Peak Hour Capacity	Load Factor	Maximum Load Point	Peak Hour Load	Peak Hour Capacity
1	to Howard/Main	Clay/Powell	1,075	1,008	107%	Cley/Polk	594	1,481
	to Geary/33rd	Sacramento/Polk	374	882	42%	Sacramento/Powell	1,229	1,386
1AX	to Davis/Pine	California/Park Presidio	382	432	88%	n.a.	n.a.	n.a.
	to Geary/33rd	n.a.	n.a.	n.a.	n.a.	Davis/Pine	248	314
1BX	to Davis/Pine	California/Fillmore	658	707	93%	n.a.	n.a.	n.a.
	to Park Presidio/California	n.a.	n.a.	n.a.	n.a.	Davis/Pine	280	393
3	to Sutter/Sansome	Post/Powell	303	410	74%	Post/Polk	136	347
	to Presidio/California	Sutter/Polk	108	473	23%	Sutter/Powell	241	378
28	to Ft. Mason	19th Ave/Lincoln	231	378	61%	19th Ave/Sloat	370	447
	to Daly City BART	19th Ave/Sloat	191	567	34%	19th Ave/Lincoln	466	520
29	to Letterman	Geneva/BART	280	325	86%	Sunset/Noriega	204	357
	to Fitzgerald/Keith	Sunset/Noriega	171	252	68%	Geneva/BART station	280	252
30	to 4th/Townsend	Stockton/Sutter	832	945	88%	Stockton/Sutter	855	851
	to Broderick/Beach	Stockton/Sutter	753	914	82%	Stockton/Sutter	797	882
30X	to Howard/Embarcadero	Chestnut/Van Ness	932	945	99%	n.a.	n.a.	n.a.
	to Beach/Scott	n.a.	n.a.	n.a.	n.a.	Chestnut/Van Ness	475	567
33	to Arguello/Maple	18th/Castro	118	252	47%	18th/Castro	170	252
	to Polk/25th	18th/Mission	103	252	41%	18th/Castro	158	252
41	to Main/Howard	Union/Columbus	718	788	91%	Union/Jackson	76	473
	to Lyon/Greenwich	Union/Columbus	79	441	18%	Union/Columbus	328	725
43	to Chestnut/Fillmore	Geneva/Mission	576	536	108%	Masonic/Haight	353	630
	to Munich/Geneva	Forest Hill Station	312	583	54%	Masonic/Haight	451	693
45	to 4th/Townsend	Stockton/Sutter	527	536	98%	Stockton/Sutter	913	614
	to Lyon/Greenwich	Stockton/Sutter	452	551	82%	Stockton/Sutter	519	599
82X	to Anza/Lincoln	4th/Townsend	160	189	85%	n.a.	n.a.	n.a.
	to 4th/Townsend	n.a.	n.a.	n.a.	n.a.	Beale/Mission	133	252

Source: Muni, FY 1999-2000 Transit Data.

Notes:

n.a. – Data not available.

Peak hour capacity is based on the Muni Bus and Metro FY 1999-2000 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60 percent and 80 percent of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.

Peak hour ridership is assumed to be 60 percent of the two-hour peak period ridership.

Note that the 82X maximum load points occur south of Market Street, while almost all Presidio-destined passengers embark and disembark at Market Street (Presidio Trust Transportation Manager), 2001.

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Table 32: Golden Gate Transit Bus Passenger Loads – 2000

GGT Route	AM Peak Hour - Northbound				AM Peak Hour - Southbound				PM Peak Hour - Northbound				PM Peak Hour - Southbound			
	Buses/Hour	Number of Pass.	Pk. Hr. Capacity	Load Factor	Buses/Hour	Number of Pass.	Pk. Hr. Capacity	Load Factor	Buses/Hour	Number of Pass.	Pk. Hr. Capacity	Load Factor	Buses/Hour	Number of Pass.	Pk. Hr. Capacity	Load Factor
2	n.a.	n.a.	n.a.	n.a.	4	153	170	90%	3	91	128	71%	n.a.	n.a.	n.a.	n.a.
3	n.a.	n.a.	n.a.	n.a.	1	11	43	26%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	n.a.	n.a.	n.a.	n.a.	7	311	298	105%	11	311	468	67%	n.a.	n.a.	n.a.	n.a.
8	n.a.	n.a.	n.a.	n.a.	2	63	85	74%	4	76	170	45%	n.a.	n.a.	n.a.	n.a.
18	n.a.	n.a.	n.a.	n.a.	5	174	213	82%	4	138	170	81%	n.a.	n.a.	n.a.	n.a.
20	2	58	85	68%	2	47	85	55%	2	46	85	54%	2	45	85	53%
24	n.a.	n.a.	n.a.	n.a.	9	292	383	76%	8	258	340	76%	n.a.	n.a.	n.a.	n.a.
26	n.a.	n.a.	n.a.	n.a.	3	123	128	96%	4	103	170	61%	n.a.	n.a.	n.a.	n.a.
28	n.a.	n.a.	n.a.	n.a.	2	46	85	54%	2	21	85	25%	n.a.	n.a.	n.a.	n.a.
30	1	3	43	7%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1	9	43	21%
32	n.a.	n.a.	n.a.	n.a.	1	25	43	59%	1	26	43	61%	n.a.	n.a.	n.a.	n.a.
34	n.a.	n.a.	n.a.	n.a.	1	33	43	78%	1	23	43	54%	n.a.	n.a.	n.a.	n.a.
38	n.a.	n.a.	n.a.	n.a.	3	90	128	71%	3	98	128	77%	n.a.	n.a.	n.a.	n.a.
44	n.a.	n.a.	n.a.	n.a.	2	52	85	61%	2	50	85	59%	n.a.	n.a.	n.a.	n.a.
48	n.a.	n.a.	n.a.	n.a.	2	58	85	68%	2	51	85	60%	n.a.	n.a.	n.a.	n.a.
50	2	56	85	66%	3	38	128	30%	2	49	85	58%	2	61	85	72%
54	n.a.	n.a.	n.a.	n.a.	6	213	255	84%	5	173	213	81%	n.a.	n.a.	n.a.	n.a.
56	n.a.	n.a.	n.a.	n.a.	3	102	128	80%	4	142	170	84%	n.a.	n.a.	n.a.	n.a.
70	2	60	85	71%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
72	n.a.	n.a.	n.a.	n.a.	3	118	128	93%	4	138	170	81%	n.a.	n.a.	n.a.	n.a.
74	n.a.	n.a.	n.a.	n.a.	4	153	170	90%	4	128	170	75%	n.a.	n.a.	n.a.	n.a.
76	n.a.	n.a.	n.a.	n.a.	5	176	213	83%	5	124	213	58%	n.a.	n.a.	n.a.	n.a.
78	n.a.	n.a.	n.a.	n.a.	2	46	85	54%	2	37	85	44%	n.a.	n.a.	n.a.	n.a.
80	1	9	43	21%	2	54	85	64%	2	73	85	86%	3	85	128	67%
90	1	13	43	31%	1	26	43	61%	1	20	43	47%	n.a.	n.a.	n.a.	n.a.
93	n.a.	n.a.	n.a.	n.a.	3	31	128	24%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	9	199	383	52%	76	2,435	3,230	75%	76	2,176	3,230	67%	8	200	340	59%

Source: Golden Gate Bridge Highway and Transportation District, October 2000 data.

Notes:

Peak hour capacity assumes 42.5 passengers per bus.

n.a. = Not applicable; Indicates that no runs are made on that route during that particular time period.

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Sidewalks within the Presidio are generally provided in areas that are currently well-occupied, such as the western portion of the Letterman Planning District and along Lincoln Boulevard in the Main Post. Most intersections within the Main Post and along Lincoln Boulevard have marked pedestrian crossings.

Pedestrian movements were collected at 33 study intersections during field surveys conducted in November and early December of 2000. At the intersection of Presidio Boulevard/Lincoln Boulevard/Letterman Drive, a total of 72 pedestrian movements were observed on the four crosswalks during the a.m. peak hour, and 62 pedestrian movements during the p.m. peak hour (note that more than one movement could be attributed to a single pedestrian). At the intersection of Mason and Lyon Streets, where there is a considerable amount of recreational pedestrian activity, 144 and 191 pedestrian movements were observed during the a.m. peak hour and p.m. peak hour, respectively. Many of these pedestrians are likely traveling to and from Crissy Field.

There are several bicycle routes within the Presidio, although bicycles and vehicles share a standard-width roadway along most of these routes. As shown in Figure 32, Lombard Street, Presidio Boulevard, Mason Street, Arguello Boulevard, 14th Avenue, and El Camino del Mar are part of the designated San Francisco Citywide Bicycle Routes (Routes #4, #55, #2, #65, #69, and #95, respectively) that continue into the Presidio. Most of these routes are Class III facilities (signed route only - bicyclists share roadway with vehicles), although the travel lanes that vehicles and bicycles share are generally wider in the southwestern portion of the Park. Mason Street has Class I (separate off-street path) and Class II facilities (dedicated, striped bike lanes on roadway edge).

The Presidio is a popular location for recreational bicycling, particularly on weekends. At the intersection of Presidio Boulevard/Lincoln Boulevard/Letterman Drive, 11 bicyclists were observed in November 2000 during the weekday a.m. peak hour, and 14 bicyclists during the weekday p.m. peak hour (it should be noted that counts would likely be much higher during non-winter seasons). At the intersection of Mason Street/Lyon Street, 66 and 76 bicyclists were observed during the weekday a.m. peak hour and p.m. peak hour, respectively. Bicycle data gathered at the Presidio entrances in 1998 indicate that about 1,700 bicyclists entered and exited the Presidio on a spring or fall weekday. On spring and fall weekend days, 3,500 and 3,000 were observed entering or leaving the Presidio, respectively. Bicycle and pedestrian counts

conducted in October 1999 at eleven locations in the Presidio from 7 a.m. to 10 p.m. confirmed those findings. Weekday observations totaled 5,900 bicyclists and pedestrians, while weekend observations at the same locations amounted to 23,500, almost four times the weekday count. The weekday peak hour occurred between 7 a.m. and 8 a.m., representing 14 percent of the total daily count, while the weekend peak hour occurred between 10 a.m. and 11 a.m., representing 11 percent of the total daily count.

The Marina Boulevard gate accommodates the greatest percentage of bicycle traffic, accommodating 23 to 45 percent of the total bicycle to and from the Presidio. The Lombard Street gate accounts for approximately six to eleven percent of the total daily bicycle trips into and out of the Presidio. A comprehensive study of pedestrian and bicycle conditions within the Presidio is currently underway (*Draft Presidio Trails and Bikeways Master Plan*).

3.5.4 PARKING

Parking occupancy information in the Main Post and Letterman Planning Districts was collected on Tuesday, January 9, 2001 during the weekday midday peak period (between 10 a.m. and 2 p.m.). Parking occupancy for the remainder of Area B was obtained from aerial photographs taken on a typical Friday in March 2000.

Table 33 tabulates the parking supply and utilization of the parking facilities within Area B of the Presidio by planning district. There are a total of approximately 11,210 parking spaces within Area B, with about 1,979 (18 percent) of the spaces occupied during the midday period. Parking facilities within each of the Presidio planning districts are between 12 percent and 22 percent occupied, indicating that there is substantial available parking in all planning districts.

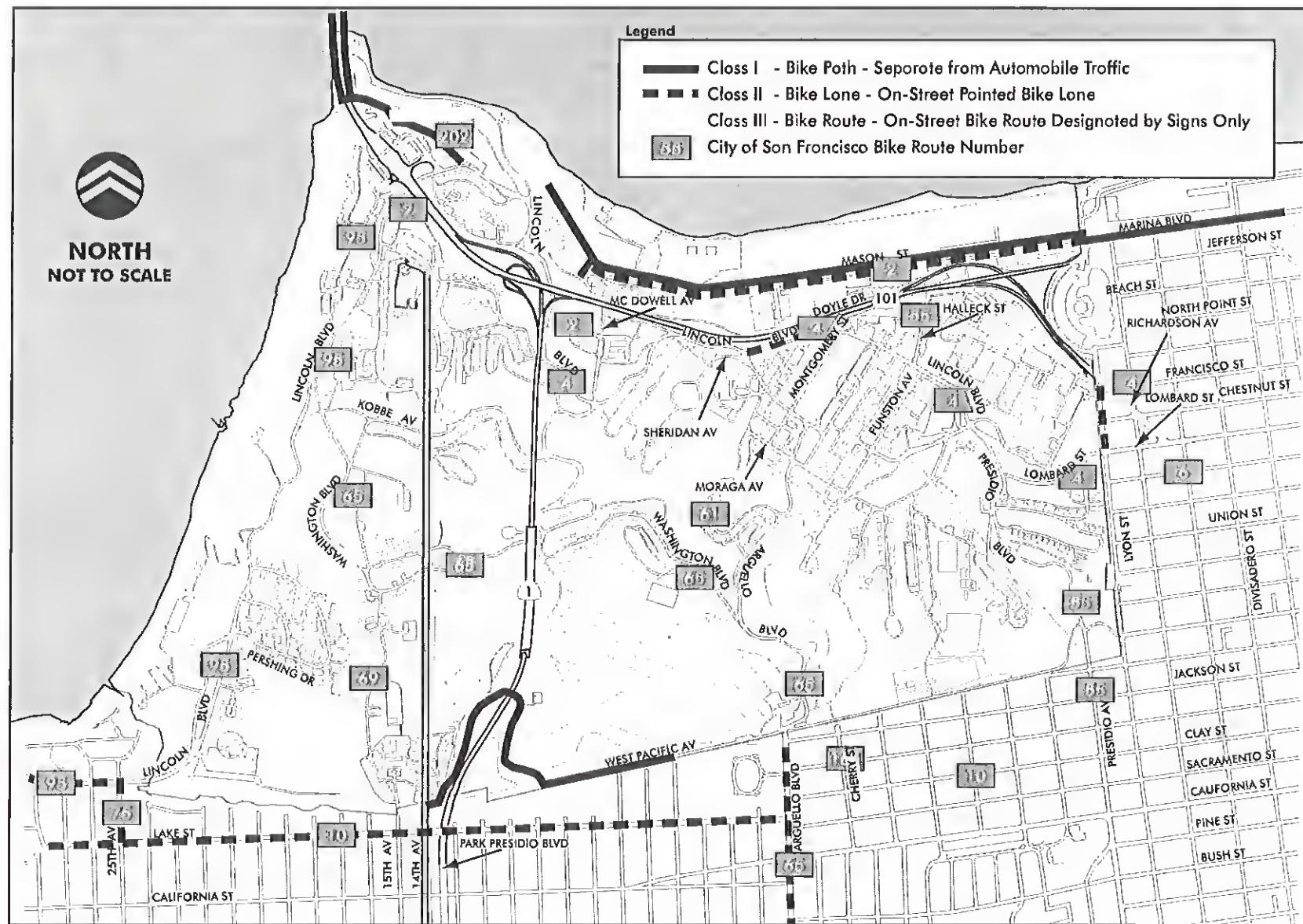
Table 33: Parking Supply and Current Utilization Within Area B

Planning District	Total Spaces	Spaces Occupied	Percent Occupied
Main Post and Crissy Field	4,070	888	22%
Letterman	2,473	309	12%
Fort Scott	963	139	14%
East Housing	1,095	198	18%
South Hills and Public Health Service Hospital	2,609	445	17%
Total	11,210	1,979	18%

Source: Wilbur Smith Associates, March 2000 and January 2001.

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Transportation and Circulation



Source: Wilbur Smith Associates, 2001, and Robert Peccia and Associates, 1996

Figure 32: Existing Bicycle Routes Serving the Presidio Area

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3.6 UTILITIES

The Presidio's utility systems date from almost every period of the Presidio's history of development as a military installation. Consequently, many of its older facilities have required significant upgrading and replacement and the Trust has an ongoing program of capital investment in its infrastructure systems. Utilities in the Presidio include water treatment, water distribution, wastewater collection, solid waste disposal, and electrical distribution. The Utilities Affected Environment section discusses the treatment, supply and distribution of these utilities.

3.6.I WATER SUPPLY AND DISTRIBUTION

WATER SUPPLY

The Trust has water resource management responsibilities and authorities to provide water to Presidio users. Historically, the Presidio water needs have been met by Lobos Creek water which is treated at the Presidio Water Treatment Plant (PWTP) and supplemented by water purchased from the San Francisco Public Utilities Commission (SFPUC). In addition, the Army also operated several groundwater wells located near the existing PWTP, golf course and Mountain Lake. These wells were taken out of service before the Trust assumed jurisdiction over Area B, and the Trust has no plans to utilize groundwater for future water supplies.

Lobos Creek is a 1.3-mile free-flowing stream that drains an approximately 3.2-square-mile drainage basin. Lobos Creek is the last remaining urban coastal stream in San Francisco that drains into the Pacific Ocean. Diversions from this water resource are limited by natural stream flow volumes and by resource protection objectives provided in the Lobos Creek Restoration Plan (Philip Williams & Associates, Ltd. 1995). Lobos Creek is in Area A.

The main source of water for Lobos Creek is the Lobos groundwater drainage basin, a 3.2-square-mile underground aquifer extending from under the southwest quarter of the Presidio south to Golden Gate Park and west to the Palace of the Legion of Honor. The aquifer is recharged directly by rainwater and indirectly by flows that leak under the paved streets of San Francisco. The

outfall from the aquifer flows both on the surface via Lobos Creek and underground via permeation below sea level at roughly equal rates. The aquifer is also the source of water for Mountain Lake on the Presidio. Mountain Lake apparently does not have any direct surface connection to Lobos Creek.

The surface of the groundwater recharge area is primarily sand dune geology. The ground consists of sand blown into layers over thousands of years from beaches along the Pacific Ocean. The shape of the creek bed follows the clay Colma Formation several meters below the stream. The steep drop of the Colma Formation at Baker Beach results in a one-way outfall from Lobos Creek to the Pacific Ocean. The Lobos Creek drainage basin captures an average annual rainfall of 23 inches per year. Rainfall has the potential to contribute to creek flows, but because most of the unpaved land north of Lobos Creek is composed of northern dune sands, rainfall is readily absorbed into the ground to recharge the aquifer. Thus, little surface runoff collects in the Lobos Creek bed for immediate downstream flow. Daily flow in Lobos Creek ranges from 1.2 million gallons per day (mgd) in dry years to 2.1 mgd in wet years. A minimum stream flow of 500,000 gallons per day, or 0.5 mgd, has been estimated to be the basic in-stream flow necessary to ensure resource preservation. As a result, between 0.7 and 1.6 mgd of Lobos Creek water is available in any given year for diversion, treatment and use at the Presidio. The availability of water in the Creek varies by water year and by season, with the dry summer months yielding the lowest amount of water and wet winter months providing the greatest amount. Conversely, the demand for water is usually highest during the dry summer months mainly due to a peak in irrigation demand. During these times, water is purchased on an as-needed basis from the SFPUC. Historically the SFPUC has supplied up to one-third of the Presidio's water demand, and several points of interconnection are currently maintained. The amount of water purchased varies by year, however, and last year the Trust purchased approximately 15% of the average daily amount used at the Presidio.

The Presidio is considered a "retail customer" by the SFPUC. As such, the purchase and use of this water is subject to the SFPUC's regulations during a water shortage, and to all mandatory water rationing programs and rate structures adopted during drought conditions. The *San Francisco 2000 Final*

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Urban Water Management Plan (SFPUC, February 2001) outlines the City's water shortage contingency plan. The SFPUC's Plan also acknowledges the Presidio as a retail customer, and identifies a constant projected water demand of 1 million gallons per day (mgd) for the park through the year 2020. As described in Section 4.6.1, the Trust seeks to substantially reduce the amount of water purchased from the SFPUC.

PRESIDIO WATER DEMAND AND CONSERVATION

Current water use at the Presidio is approximately 0.8 mgd. Of this total, roughly half is used for irrigation and the balance is used for domestic service. Based on available records, the demand for water has remained relatively constant at 0.8 mgd since 1997. During the last several years, many buildings have been rehabilitated and reoccupied, however water demand has remained relatively constant. The Trust requires that as part of building rehabilitation, water efficient fixtures (i.e., faucets, toilets, etc.) are installed. In addition, effort to improve irrigation efficiency and in particular at the Presidio Golf Course which has installed a satellite based which can be attributed to the Trust's aggressive use of water efficient fixtures in building rehabilitation projects and other domestic-side conservation actions. In 2000, the total water consumed for domestic and irrigation purposes was approximately 285 million gallons.

FIRE FLOW

The Presidio water distribution system provides water for domestic and irrigation purposes as well as internal building sprinkler systems and fire hydrants. The NPS Fire Department requires that a minimum of 3.0 million gallons of the total 6.0 million gallons of water stored in the Presidio reservoir is reserved for fire flow. Fire flow is defined as the rate of the flow of water combined with the duration of flow to equal the supply of water reserved for fire emergencies. The Uniform Fire Code establishes the required volume and duration of fire flow that must be present within a certain distance of a structure according to the type of construction, size of the building, and other site layout conditions. The GMPA EIS (Nolte and Associates 1991) identified water distribution system deficiencies that resulted in inadequate fire flow to the Letterman Complex, and improvements have since been made to the water distribution system that have increased the fire flow available. Other

improvements to the water distribution system have been ongoing as required to ensure adequate fire flow to new development throughout the Presidio to meet the Uniform Fire Code.

Water Treatment and Distribution

The Trust is responsible for daily operations of the Presidio Water Treatment Plant (PWTP) as well as the operation and maintenance of the water distribution system at the Presidio. The PWTP takes water from Lobos Creek and treats it to potable water standards for use by Presidio tenants. The PWTP is permitted by the State of California Department of Health Services (DHS). Water produced at the plant must meet stringent water quality requirements. Water quality testing is accomplished through the use of independent laboratories. The PWTP has consistently met or exceeded all water quality standards as required by the California Safe Drinking Water Act. The PWTP was upgraded in 1995, both seismically and for its conventional treatment technology (flocculation and settlement, sand filtration, and chlorine/fluorine treatment). The current plant capacity is 2.0 mgd, but daily production ranges from 0.4 mgd in winter to 1.0 mgd in summer.

The Trust operates and maintains approximately 51 miles of water distribution system at the Presidio. The Trust provides all new water connections required for building rehabilitation and new construction activities at the Presidio. As part of the Trust's water conservation efforts, building retrofits and new construction activities are required to install low flow fixtures. Upgrades to the Presidio Water Distribution System consist of many individual small projects. Ongoing upgrades include eliminating dead ends, adding loops and valves in strategic locations, and reducing the number of lead joints throughout the distribution system. These upgrades will improve water quality and system reliability. As an example, the Trust has replaced approximately 100 lead joints in the distribution system as part of an ongoing effort to improve water quality. Measured lead levels in Presidio drinking water ranged from 0.5 to 64 parts per billion (ppb) in 1993. By 1999, the levels had dropped to less than 1 to 10 ppb. This represents an appreciable increase in water quality to Presidio tenants.

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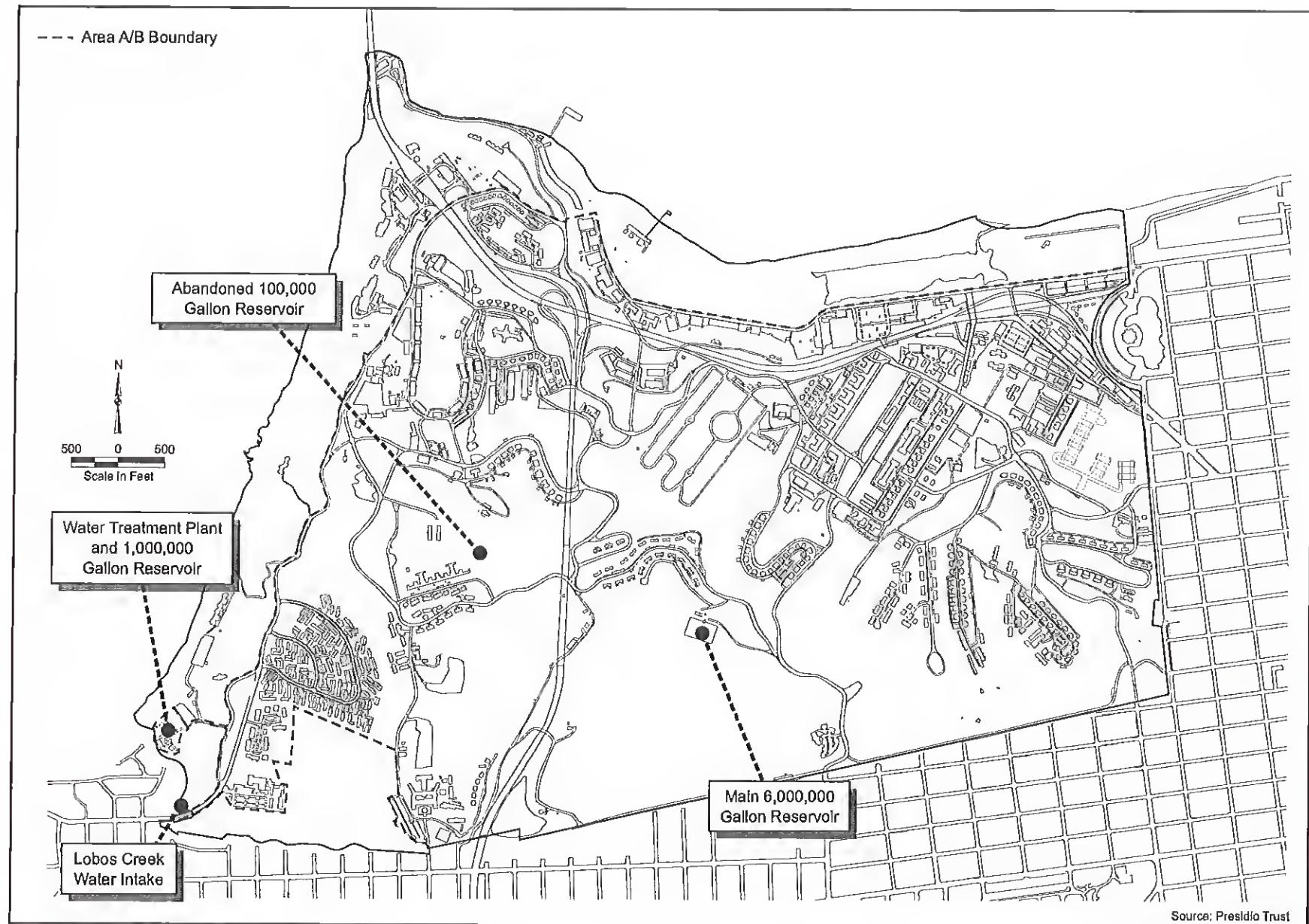


Figure 33: Water Supply Facilities

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RECYCLED WATER

In addition to the water conservation, the concept of providing recycled water as a way to reduce potable water consumption for non-potable uses (i.e., irrigation) has long been considered as future goal at the Presidio. The 1994 GMPA EIS assumed that up to 1.0 mgd of recycled water would be available for use at the park. At the time the GMPA was prepared, it was assumed that the City would provide this water. The City prepared a Recycled Water Master Plan in 1996 identifying a 10+ mgd project, however, the Plan was never adopted and the City is currently working to revise the Plan to provide for a smaller, less costly project. In 1999, the City asked the Trust to consider developing an on-site water recycling system. The Trust responded and in March 2002, released a draft plan and Environmental Assessment (EA) for a proposed on-site project. The proposed project would substantially reduce off-site wastewater flows while maximizing the supply of recycled water available for use at the Presidio. The first phase would provide up to 200,000 gpd of recycled water and the second phase would expand the system to provide up to 500,000 gpd. This drought proof source of water will help reduce Lobos Creek and SPFUC water demands as well as minimize the amount of potable water consumed for non-potable uses (i.e., landscape irrigation). Based on the direction provided in the GMPA, major new projects occurring since 1994 requiring irrigation at the Presidio (i.e., Crissy Field, LDAC project) have been conditioned to require installation of necessary infrastructure (i.e., purple piping) in anticipation of the future provision of recycled water.

3.6.2 PRESIDIO SANITARY SEWER SYSTEM

SYSTEM OVERVIEW

The storm and sanitary sewer collection systems are two separate systems at the Presidio--in contrast to the City and County of San Francisco systems, which are combined. Sanitary sewage (wastewater) is collected from buildings at the Presidio and discharged into the City's sanitary sewer system and the Trust pays the City for these services. Storm water is collected from throughout the Presidio and routed to outfalls that discharge into the Crissy Field Marsh, the San Francisco Bay or the Pacific Ocean, with the exception of a small area located on the southwest boundary of the

park. (see Section 3.6.3 for additional discussion of the storm drainage system).

WASTEWATER COLLECTION AND DISPOSAL

The sanitary sewer system is comprised of approximately 50 miles of sewer lines. Raw wastewater is collected from Presidio buildings and discharged to the City's system at one of five locations along the park's border with the City. The City and Trust meter the amount of wastewater discharged to the City, and the Trust pays the City for treatment services based on total volume discharged. Over the years, the amount of wastewater discharged to the City has decreased substantially. Before leaving the Presidio, the Army implemented a major infrastructure repair program which included slip-lining of main and lateral sanitary sewer lines with high density polyethylene (HDPE) pipe which reduces the potential for infiltration of stormwater into the sanitary system. These activities help to substantially reduce infiltration as well as separate the storm and sanitary sewers. During 2000 and 2001 the Presidio Trust conducted surveys of the Presidio sanitary sewer system. Several remaining areas requiring immediate repair were identified during the surveys, and these repairs have already been implemented. Based on the sewer outflow, it appears that there may still be some minor points of infiltration within the system. The Trust plans to address these minor areas through on-going infrastructure repairs. Although it is difficult to make a direct comparison between the annual flow data from before and after the various improvements were made (as occupancy rates have varied and repairs are ongoing), there is clearly a noticeable reduction. For example, metering data indicates that total wastewater flows entering the City's system in 2000 were approximately 120 million gallons or roughly one-quarter of the 1990, pre-repair flows (which were about 475 million gallons). Current average daily flows are 400,000 gpd.

Wastewater discharging from the east side of the Presidio is transported to the City's Southeast Water Pollution Control Plant (SEWPCP) for treatment and disposal. There are three connections to the City's system on the eastside of the park: Lombard Gate, Gorgas Gate and at Marina Blvd. The SEWPCP has a peak secondary treatment capacity of 150 mgd in dry weather, and 250 mgd in wet weather. In 2000, the SEWPCP treated an average of approximately 67 mgd. Wastewater discharging from the west side of the Presidio is transported to the Oceanside Water Pollution Control Plant (OWPCP) for treatment and

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disposal. There are two Westside connections to the City's system: one at 25th Avenue and one at 15th Avenue. The OWPCP has a peak secondary treatment capacity of 43 mgd under dry weather, and 65 mgd in wet weather. In 2000, the OWPCP treated an average of approximately 17 mgd.

The City maintains and operates a combined sewer system (stormwater and sanitary sewage are conveyed and treated in the same system). During wet weather, there is a surge in the volume of flows in the City's system and during peak events combined sewer overflow (CSO) can occur at the City's SEWPCP. During a CSO, treatment processes are limited and flows are discharged to the Bay. When CSOs occur, they are comprised of approximately 94 percent storm water and 6 percent sanitary sewage. Although the City has invested a substantial resources in correcting this problem, CSOs can still occur and the City's NPDES Permit (CA0038610) for the plant allows up to 10 events per year. The OWPCP has sufficient wet weather capacity and CSOs are not a problem at this location.

Of the five discharge locations at the park, approximately 85% of all Presidio flows are conveyed to the City's system via the Presidio Main Line which exits the park near the Gorgas Gate. The proposed on-site water recycling project (see Section 3.6.1) would capture and reuse flows from this line thereby substantially reducing the Presidio's contribution to the City's system. Because there is little to no demand for irrigation water (i.e., recycled water) during the winter months, a variety of wet weather operations being evaluated for the proposed recycled water system including the treatment and on-storage of wastewater flows during peak wet weather events. In addition, the implementation of stringent water conservation practices would also help to contribute to a reduction in the amount of Presidio wastewater flows entering the City's system.

3.6.3 STORM DRAINAGE

The Trust is responsible for operating and maintaining the storm water collection systems at the Presidio. Storm water is collected from throughout the Presidio and routed underground to outfalls that discharge into the restored Crissy Field Marsh, San Francisco Bay or the Pacific Ocean. A small area located on the southwest boundary of the park discharges to the Richmond Transport, which part of the City's combined

sewer system. The Trust maintains approximately 33 miles of storm sewers throughout the Presidio. It is generally in fair to good condition. However, the Trust anticipates further upgrades will be needed to comply with proposed EPA regulations and permits.

The GMPA EIS indicated that portions of the storm drainage system were not adequate to convey the runoff from the 10-year storm event. Several system upgrades have occurred to address these system deficiencies; however, all of the upgrades identified in the GMPA EIS have not been completed. The Presidio's hilly terrain makes flooding an unlikely issue throughout most of the Presidio. Flat areas such as Crissy Field are most prone to flooding, and Crissy Field has been the focus of most recent system upgrades.

Multiple drainage basins, which are roughly approximate to the PTMP planning districts, comprise the Presidio. The existing storm drainage capacity of the basins is discussed below.

Main Post and Crissy Field

Together these two planning districts are separated into five different drainage basins designated by their respective outfall pipe. These are basins D, E, F, G-H, and I-J-K-L. The outfalls servicing these planning areas discharge directly to the bay or Crissy Marsh.

The D basin is serviced by a 72-inch pipe, and extends through the Main Post, Letterman, and East Housing Planning Districts. The 72-inch pipe is over designed and, at a conservative estimate, has a capacity of 350 cubic feet per second (cfs). The portion of the D basin that lies within the Main Post Planning District falls roughly between Anza Street and Funston Avenue. It has a 10-year design flow of 31.6 cfs.

The E and F drain systems recently had their outfalls reconstructed to discharge into the Crissy Field wetland. Since the primary cause of flooding is the inability to discharge collected storm water, the reconstruction of these outfalls eliminates potential impacts from accumulated beach sand and facilitates drainage. An oil/water separator was installed on the discharge line to enhance the quality of the water flowing into the wetlands.

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The E drainage basin is relatively small. It is bounded by Mason Street on the north, Lincoln Street on the south, Hallack Street on the east, and tapers out by Building 211 on the west. This area has a 10-year design flow rate of 8.0 cfs and a conveyance capacity of 8.8 cfs. The E basin has sufficient capacity for an additional 0.8 cfs.

The F drainage basin falls roughly between Taylor Road and Anza Street. It has a 10-year design flow of 62.8 cfs. The primary outfall pipe is a 24-inch diameter Reinforced Concrete Pipe (RCP) with a full flow capacity of 132.9 cubic feet per second cfs. The F basin has sufficient capacity for an additional 70.1 cfs.

The G-H and I-J-K-L drain systems were newly installed in 2000. They are designed for the 50-year storm event. These new systems drain the Stable area, the west side of Crissy Field (from Building 610 west), and the western portion of the Main Post (from Taylor Road west).

Letterman

The Letterman Planning District is served by outfall B-4, which consists of a 42-inch pipeline with a capacity of 85 cfs. The discharge point for this outfall is planned to be rerouted to Crissy Marsh, similar to outfalls E & F, to prevent the accumulation of beach sand and promote drainage.

Fort Scott

The Fort Scott Planning District is situated on a plateau high above sea level. All water from Fort Scott flows down gradient and discharges into the San Francisco Bay via outfall L-2, L-4, or M. The drainage basins discharging to L-4 and M are mostly along the Crissy Field Planning District, and will not be affected greatly from additional flows from the main Fort Scott Planning District. Outfall L-2 will be the system that receives the main flow. This outfall currently experiences operational problems due to sand accumulation at the mouth of the discharge. If the mouth of the outlet is not kept clear, the drainage system can back-up during intense storm events. Alternatives to address this problem are currently being evaluated.

East Housing

The East Housing Planning District lies mostly within the Tennessee Hollow drainage basin. All of the storm water runoff in this drainage basin is conveyed, via open channel and sewer pipe, to outfall D.

South Hills and Public Health Service Hospital

The South Hills and Public Health Service Hospital Districts are the least developed of all the planning districts at the Presidio. These districts contain large areas of open space that promote natural drainage. The developed portions of these districts include areas surrounding Wherry Housing and the Public Health Services Hospital. Drainage from these areas, as well as a small portion of Highway 1, is collected and discharged to the Richmond Transport, which is part of the City's combined sewer system. These areas currently do not experience flooding.

WATER QUALITY

The Trust is in the process of finalizing an interim Stormwater Pollution Prevention Plan (SPPP) for the Presidio. The SPPP is being prepared in coordination with the National Park Service and will include the sampling design and protocol, threshold requirements for constituents monitored, and a reporting mechanism for program. The SPPP will also include park-wide Best Management Practices (BMPs), consistent with the California Stormwater Best Management Practices Handbook, including physical structures such as oil-water separators and infiltration basins, as well as operational practices such as street sweeping that will be implemented to minimize runoff and improve water quality. There are currently four oil-water separators located on stormwater lines which drain to Crissy Marsh. The Trust also currently conducts year-round street sweeping and regular maintenance and cleaning of stormwater inlets. The Presidio Golf Course has implemented as site-specific SPPP which includes a variety of BMPs such as practices to minimize irrigation and runoff, regular cleaning of inlets, cleaning of golf carts, as well as other practices. This interim plan Presidio-wide SPPP is being developed specifically to adhere to the general guidelines for storm water management as established under the National Pollutant Discharge Elimination System (NPDES), and will remain in effect until the Trust obtains an NPDES Phase II permit.

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3.6.4 SOLID WASTE

REGULATIONS

The State of California authorizes a local enforcement agency (a city or county) to permit, inspect, and enforce solid waste handling and disposal activities in its jurisdiction. A variety of types of disposal sites are permitted, including municipal solid waste facilities, which receive domestic solid waste as well as a variety of other waste types. For example, construction and demolition debris disposal sites specialize in the disposal of construction and demolition debris as well as its diversion from the waste stream through various recycling techniques. Other waste sites accept strictly regulated types of waste. Some solid waste facilities are permitted to accept a broad range of the waste types described above. A federal agency disposing of waste at one of these permitted sites must comply with all appropriate state and local laws.

SOLID WASTE GENERATION

The Trust handles solid waste disposal through contracts with private haulers. According to the latest available estimates, approximately 22,000 tons of solid waste are generated at the Presidio every year, and sent to Contra Costa County waste disposal sites (U.S. Army Corps of Engineers 1991). These estimates are conservative, because the Trust is developing a comprehensive waste management system to minimize the park's impact on the solid waste stream.

There are 20 solid waste landfill sites in the nine-county Bay Area (California Integrated Waste Management Board and State Board of Equalization 1999). The number of solid waste disposal sites available for the disposal of waste from the Presidio increases to 28 when adjacent counties, such as San Joaquin, Yolo and San Benito, are included.

As of FY 2000, the Presidio diverted approximately 25 percent of materials from the waste stream annually as a result of waste reduction efforts. The Presidio has a goal of diverting 50 percent of the waste stream. The practices that are being implemented by the Trust to meet waste reduction goals are:

- Curbside residential recycling program;
- Comprehensive recycling program for all non-residential facilities;
- Special-event recycling;
- Public recreation on-site recycling;
- Salvage program for equipment, supplies, and building materials;
- Construction and demolition waste management plan; and
- Organic debris composting.

The Trust is building infrastructure and programs to maximize the capability to handle materials on-site in a closed-loop system. Whenever possible, materials are reused or recycled on-site, minimizing disposal, handling, and transport. Asphalt and concrete are recycled from roadwork, and concrete from building deconstruction will be recycled and reused on site. When planning for the removal of any buildings, the following hierarchy of waste management is used:

- Adaptive reuse and renovation of building on-site;
- Adaptive reuse of building off-site by moving the building;
- Deconstruction of the buildings for reuse of components elsewhere;
- Salvage all possible elements and materials from buildings for "value-added" reuse. In the case of selective demolition, separate materials on site for recycling and reuse; and
- Demolish and separate recyclable and compostable materials from the waste.

The Trust is working closely with tenants to provide waste reduction education. The San Francisco Conservation Corps (SFCC) operates a community recycling center in the Presidio and conducts school education programs, youth job training, and waste reduction outreach. The Presidio composting program collaborates with SFCC and conducts additional education programs for local schools, summer camps, and the general public.

3.6.5 ENERGY CONSUMPTION AND DISTRIBUTION

This section describes electrical and natural gas facilities in the Presidio. Ongoing energy conservation efforts are also described.

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PRESIDIO ELECTRICAL SUPPLY

In 1990, 57,378 megawatt-hours of electricity were distributed at the Presidio serving 6,664,000 sf of building space. This translates into an average electric intensity of 8.61 watts per square foot (W/sf). In 1999, 21,208 megawatt-hours of electricity were distributed at the Presidio serving 2.9 million sf of buildings; this translates into an average electric intensity of 7.33 W/sf.

The total load capacity of the Presidio's electrical infrastructure is 7,307 kilovolt amps (kVA). Pacific Gas & Electric's (PG&E) feeders entering into the Presidio currently have approximately 3,000 kVA of spare capacity. Existing current demand at the Presidio is 4,307 kVA.

The Trust operates and maintains the electrical distribution system at the Presidio. The system consists of approximately 42 miles of above-ground and under-ground electrical lines. The Presidio is a bundled service customer of PG&E, and receives electric service at primary voltage at two major points of connection (Greenwich and Main Post substations). The Trust's high voltage department then distributes power to the various facilities at the Presidio. The high voltage department maintains two major substations (Greenwich and Main Post), as well as 12 emergency back-up generators at various buildings across the Presidio.

The Trust upgraded the Main Post substation in order to increase the reliability of the electric distribution system at the Presidio. The work consisted of overhauling the 12 kV circuit breakers and retapping the major bus bars. This work required an eight-hour electrical outage, which was carefully coordinated with the affected tenants.

Having its own local high voltage maintenance shop allows the Trust to respond in a very timely manner to electrical outage problems at the Presidio. A typical response time for an electrical outage at the Presidio is under 10 minutes. It also allows the Trust to carefully coordinate with Presidio tenants any required power outages for system maintenance.

The Trust has several ongoing projects and practices to maintain the integrity and reliability of the electrical distribution system at the Presidio

including substation upgrade and maintenance. Additionally, the trust is planning a major distribution system condition assessment to establish and prioritize long-term maintenance goals.

The Trust is in the process of completing an Energy Management Strategy which will establish a framework for meeting projected energy demands at the Presidio. The strategy will evaluate the feasibility of implementing various on-site generation and cogeneration systems, including microturbines, fuel cells and photovoltaic panels. On-site generation will enhance the reliability of the Presidio's electrical supply and demonstrate the commercial viability of these emerging technologies.

NATURAL GAS SUPPLY

The natural gas distribution facilities at the Presidio are owned and operated by PG&E. In 1990, 6.7 million therms of natural gas were distributed through the system to the U.S. Army and other users at the Presidio. In 1999, 1.2 million therms of natural gas were distributed to users throughout the Presidio.

ENERGY CONSERVATION

Federal energy management policy is articulated in Executive Order 13123. The major goals of Executive Order 13123 are summarized below:

- Greenhouse Gas Reduction Goals: reduce greenhouse emissions by 30 percent by 2010 as compared with 1990;
- Energy Efficiency Improvement Goals: reduce energy consumption per square foot by 30 percent in 2005 and 35 percent in 2010 as compared with 1985;
- Renewable Energy: strive to expand the use of renewable energy by implementing renewable energy projects and purchasing renewable energy;
- Petroleum: reduce the use of petroleum by switching to less greenhouse gas intensive, non-petroleum energy sources and by eliminating unnecessary fuel use; and

AFFECTED ENVIRONMENT

Utilities

- Source Energy: strive to reduce total energy use and associated greenhouse gas as measured at the source.

The best available baseline information to determine if the Presidio has met the energy efficiency improvement goals is from 1990. In 1990, 869,231 million British thermal units (BTUs) of energy were consumed at the

Presidio serving 6.7 million sf of buildings with an annual energy index of 130,437 BTU per square foot. In 1999, 190,451 million BTUs of energy were consumed at the Presidio serving 2.9 million square feet of buildings with an annual energy index of 65,807 BTU per sf. This change represents a 50 percent reduction in energy usage from the 1990 baseline usage.

AFFECTED ENVIRONMENT

Presidio Trust Operations

3.7 PRESIDIO TRUST OPERATIONS

The Trust Act requires that the Trust preserve and enhance the Presidio's resources for public use, while managing Area B of the Presidio to become financially self-sufficient by Fiscal Year (FY) 2013. Self-sufficiency requires that by 2013 annual revenues generated by Trust operations meet or exceed the annual operating expenses without need of further continuing annual federal appropriations. In addition, the Trust must ensure that the Presidio generates sufficient revenues to meet long-term capital needs.

In FY 2000, the Trust had actual expenditures of \$57.9 million and 259 full-time equivalent staff were employed. Expenditures included \$39.1 million of operations expenditures (including \$514,000 allocated for special events/public programs), \$13.0 million for capital projects, \$4.4 million for environmental remediation, and \$1.4 million of finance, insurance, and contingency costs. Inflows available to fund these expenditures include \$23.3 million of revenue (including residential and non-residential leasing, utility

fees, and development permits and passthroughs) and \$44.7 million of other funding sources (including \$24.2 million of appropriations, \$4.4 million earmarked for environmental remediation, and \$6 million of borrowing from the federal treasury).

The Presidio Trust FY 2001 budget calls for expenditures of \$115.5 million and 455 full-time equivalent staff will be employed. Expenditures include \$53 million of operations expenditures (including \$1.8 million allocated for public programs), \$36.6 million for capital projects, \$20 million for environmental remediation, and \$5.7 million of finance, insurance and contingency costs. Inflows available to fund these expenditures include \$47 million of revenue (including residential and non-residential leasing, utility fees, and development permits and passthroughs) and \$69 million of other funding sources (including \$23.4 million of appropriations, \$20 million earmarked for environmental remediation, and \$22.5 million of borrowing from the federal treasury). The FY 2001 budget comparison is shown on Table 34.

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Presidio Trust Operations

Table 34: Presidio Trust Budget Comparison

	REVISED FISCAL YEAR 2000	BOARD APPROVED FISCAL YEAR 2001
INFLOWS		
REVENUES		
Residential	\$13,141,138	\$20,041,810
Non-residential	\$3,616,820	\$9,531,512
SDC (No DOD in FY 2001)	\$2,000,839	\$2,578,138
Utilities, Telephone & Tap Fees	\$3,300,000	\$3,070,800
Permits/Compliance	\$50,000	\$1,100,000
Demolition - Letterman	\$0	\$8,000,000
Other	\$897,980	<u>\$2,634,120</u>
Subtotal - Revenue	\$23,006,777	\$46,956,380
OTHER INFLOWS		
Appropriation	\$24,233,000	\$23,400,000
DOE Funding for Utility Improvements	\$0	\$1,300,000
DOD Funding for Housing Improvements	\$1,000,000	\$1,000,000
Environmental Remediation	\$12,924,155	\$20,079,982
Interest Earned on Investments	\$550,000	\$750,000
Borrowing	\$6,000,000	<u>\$22,500,000</u>
Subtotal - Other Inflows	\$44,707,155	\$69,029,982
TOTAL INFLOWS	\$67,713,932	\$115,986,362
OUTFLOWS		
EXPENDITURES		
General Counsel	\$2,153,109	\$2,569,474
Facilities	\$18,785,908	\$21,497,223
Real Estate	\$1,455,408	\$3,602,386
Planning	\$3,221,751	\$6,731,146
Special Events/Public Programs	\$513,937	\$2,804,483
Administration/Operations	\$6,539,071	\$9,843,447
Law Enforcement, Fire & Safety	<u>\$5,950,000</u>	<u>\$5,950,000</u>
Subtotal - Expenditures	\$38,619,184	\$52,998,159
OTHER OUTFLOWS		
Capital Projects	\$12,490,343	\$36,611,048
Environmental Remediation	\$12,924,155	\$20,079,982
Finance & Insurance Costs	\$1,635,250	\$1,735,250
Contingency/Unknown Projects	<u>\$2,045,000</u>	<u>\$4,055,000</u>
Subtotal - Other Outflows	\$29,094,748	\$62,481,280
TOTAL OUTFLOWS	\$67,713,932	\$115,479,439
NET CASH FLOW	\$0	\$506,923

Sources: The Presidio Trust Fiscal Year 2001 Budget; Bay Area Economics, 2001.

ENVIRONMENTAL CONSEQUENCES AND MITIGATION

ENVIRONMENTAL CONSEQUENCES

Introduction to the Analysis

4.1 INTRODUCTION TO THE ANALYSIS

4.1.1 SCOPE OF THE ANALYSIS

This section describes the potential environmental effects of the alternatives under review. An Environmental Screening Form (ESF) was prepared to determine the appropriate scope of the EIS analysis. The ESF was based on preliminary environmental analysis and early public scoping.

The ESF (provided in Appendix A) determined there would be no measurable effects on the following impact topics that were included in the GMPA EIS due to changed circumstances or new opportunities since preparation of the GMPA, and, therefore, do not require additional analysis in this Supplemental EIS:

- Health Care,
- Geology and Soils,
- Floodplains,
- Climate, and
- Human Health, Safety, and the Environment.

As a result of the ESF analysis and public scoping, the following impact areas are addressed in this chapter:

- Cultural Resources: Historic Architectural Resources, Cultural Landscape, and Archaeology;
- Natural Resources: Biological Resources, Water Resources, Visual Resources, Air Quality, and Noise;
- The Community: Land Use, Socioeconomics and Housing, Schools, Visitor Experience, Recreation, and Public Safety (Police, Fire, and Emergency Services);
- Transportation and Circulation: Roadway Networks, Parking, Pedestrian and Bicycle Facilities, Public Transportation, and Construction Traffic;
- Utilities: Water Supply, Wastewater Treatment and Disposal, Storm Drainage, Solid Waste, and Energy (Electricity, Natural Gas, and Conservation); and
- Presidio Trust Operations.

In some sections, the analysis relies on information and analysis contained in the GMPA EIS, which is cited or summarized as appropriate. Each topic section includes the following elements:

Methodology - Explains the methods used to determine whether an impact would occur. Some impacts are evaluated quantitatively, either with simple calculations or through computer modeling. Examples of quantitative analyses are roadway operations, which are determined through the use of a traffic model, and demand for school services, which is determined by applying a factor (students per household) to the anticipated population of the Presidio under each alternative, then comparing that figure to the number of spaces available in the school system. If quantitative analysis is used, the model or calculations are explained. Other impacts are evaluated qualitatively, where the quality, not necessarily the quantity, of the resource is considered. Examples of such impacts include changes in visual character and land use compatibility. Applicable federal laws and regulations are evaluated for their ability to reduce the impacts of the alternatives.

In order to measure the magnitude of impacts, a baseline condition must be identified. The baseline is the condition that best describes Area B of the Presidio as it would be if no action was taken on the proposed Presidio Trust Management Plan (PTMP). The No Action Alternative (GMPA 2000) includes the level of development and activity that would be expected to occur in the absence of any action on the PTMP. Therefore, the impacts of all other alternatives are compared to the No Action Alternative (GMPA 2000).

Potential Impact - Describes the impacts of the alternatives. Where relevant, both direct and indirect effects are described.

Every alternative is evaluated under each impact heading, in the following order:

- No Action (GMPA 2000),
- Final Plan and Final Plan Variant,
- Resource Consolidation,
- Sustainable Community,
- Cultural Destination, and
- Minimum Management.

Mitigation Measures - Includes measures adapted from the GMPA EIS and new mitigation described in the impact discussion

ENVIRONMENTAL CONSEQUENCES

Cultural Resources

4.2 CULTURAL RESOURCES

This section evaluates potential impacts to historic resources, including the National Historic Landmark District (NHL), and potential impacts to the Presidio cultural landscape, and to archaeological resources within the Presidio. The evaluation methodology, potential impacts for each alternative, and mitigation measures to address potential impacts are discussed.

4.2.1 HISTORIC ARCHITECTURAL RESOURCES AND THE CULTURAL LANDSCAPE

METHODOLOGY

Potential effects on historic architectural resources and the Presidio cultural landscape are assessed in this section by determining the potential for physical changes, including building rehabilitation, landscape changes, building demolition and new construction, under each alternative. For each alternative, the analysis presents a planning district by district discussion of proposed changes including the maximum allowable new construction and demolitions. The effectiveness of the Final Plan's Planning Principles and District Guidelines, and regulatory requirements that would reduce or eliminate potential adverse effects are also described.

Section 110 of the NHPA sets out the broad historic preservation responsibilities of federal agencies to ensure that historic preservation is fully integrated into ongoing programs. Under Section 110(f), special protection is to be afforded to NHLs. Under that provision a federal agency must, "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm" to a NHL that could be directly and adversely affected by an undertaking such as the proposed plan.

Section 106 of the NHPA requires federal agencies to take into account the effects of their actions on historic properties and to seek comments from an independent reviewing agency, the Advisory Council on Historic Preservation (AChP). The revised regulations of the AChP (Title 36 of the Code of federal Regulations at part 800) provide the methodology for assessing impacts on historic resources and detail the requirements of the consultation

process. When a project is complex and is expected to continue over time, like the Final Plan, the regulations allow development of a Programmatic Agreement that governs ongoing and future activities undertaken as part of the project or plan it addresses. Implementation of the Programmatic Agreement satisfies the agency's obligations under Section 106 and 110(f) of the NHPA (dated March 2002, signed by the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the National Park Service, and the Presidio Trust, as well as the National Trust for Historic Preservation and Fort Point and Presidio Historical Association. See Appendix D).

Under the Trust Act, the Trust is directed to develop a comprehensive management program to reduce expenditures and increase revenues to the maximum extent feasible. The program must include demolition of structures that cannot be cost effectively rehabilitated, and that are identified in the GMPA for demolition. The Trust is also directed to evaluate for possible demolition and/or replacement those buildings identified as categories 2 through 5 in the Presidio of San Francisco Historic Landmark District Historic American Building Survey (HABS) Report, 1985.

POTENTIAL IMPACTS

IMPACTS ON INDIVIDUAL BUILDINGS AND/OR THE NATIONAL HISTORIC LANDMARK DISTRICT

No Action Alternative (GMPA 2000)

These specific evaluations of HABS rated buildings are not included in the plan alternatives or the EIS analysis.

Building Rehabilitation

Under the No Action Alternative (GMPA 2000), the overall effect on historic buildings would be beneficial. Rehabilitation of historic buildings would be conducted in accordance with the *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* (NPS 1995), and the *Secretary of the Interior Standards for the Rehabilitation of Historic Properties* (NPS 1992). The Secretary's Standards direct the manner in which historic buildings are altered, in order to ensure that historic integrity is retained and to ensure that

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the rehabilitation is below the threshold of an adverse effect. Rehabilitation would have a beneficial effect on buildings, because it would reverse and/or prevent deterioration. Building-specific assessments of existing conditions, their character-defining features, and physical history reports would aid in the successful rehabilitation process. Historic building rehabilitation would be reviewed consistent with the Programmatic Agreement that constitutes the Trust's compliance with Section 106.

Stabilization and Maintenance

Stabilization of buildings for which no use is immediately available would re-establish structural stability and weather-resistance as necessary, also resulting in a beneficial impact. Stabilization would reestablish structural stability and weather-resistance and the work would be done in a manner that complies with the Secretary of the Interior's Standards.

Building Demolition

Under the No Action Alternative (GMPA 2000), a maximum of up to 1.12 million square feet (sf) of buildings could be demolished. The majority of this demolition would be of non-contributing buildings in the Crissy Field, East Housing, and South Hills Planning Districts. Demolition of non-contributing buildings would not impair the integrity of the NHLD, and could improve the NHLD by removing elements that are not consistent with its period of significance.

Those contributing buildings designated for demolition in the GMPA would be the only historic buildings subject to demolition under the No Action Alternative (GMPA 2000). Demolition of these structures (Buildings 113, 118, 681, 683, 1221, 1221A, 1285, 1369, 1387, 1390 and 1779) was analyzed in the GMPA EIS, which concluded that "the removal of 48 historic buildings would have an adverse effect on the NHLD but would not affect the status of the landmark." The GMPA EIS further concluded that overall impacts on historic buildings would be beneficial, due to the amount of building rehabilitation proposed. Because only those buildings previously identified for demolition would be demolished in the No Action Alternative (GMPA 2000), there would be no new adverse effect from demolition of contributing structures under this alternative.

New Construction

Up to 170,000 sf of new construction could occur under the No Action Alternative (GMPA 2000), concentrated in the Main Post, PSH, and Fort Scott Planning Districts. New construction would be compatible with the NHLD through elements of building design, density, massing, and character-defining features of the surrounding historic setting. New construction under the No Action Alternative (GMPA 2000) would be subject to several controls to ensure compatibility with surrounding buildings and the NHLD.

Specifically, adopted GMPA EIS mitigation calls for preparation of guidelines for compatible new construction, and compliance with the *Secretary of Interiors Standards for the Rehabilitation of Historic Properties*, which would ensure that new construction is compatible with existing historic buildings and the NHLD. Under the No Action Alternative (GMPA 2000), new construction would also be subject to further review under Section 106 of the NHPA, as described in the Programmatic Agreement and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan (See Appendix B of the Final EIS). The Planning Principles require that the mass, scale, style and color of new construction be compatible with the historic setting of the Presidio. The Planning District Guidelines identify character-defining features of each planning district that would need to be maintained or enhanced, and include maximum building height by district, for new construction.

District Descriptions

The following are general actions contemplated for each of the Planning Districts that could affect cultural resources:

Main Post

The removal of some historic structures (per the 1994 GMPA) to provide replacement parking for the parking lost when the parade ground is restored, would have an adverse effect on the NHLD but would not affect its status. In general, buildings would be rehabilitated and some limited new construction could occur if needed to meet essential program and management needs. New construction would be sited and designed to be compatible with the NHLD.

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Maximum demolition = 50,000 sf

Maximum new construction = 100,000 sf

Crissy Field (Area B)

The removal of non-historic buildings in the central area of Crissy Field would allow for natural resource restoration. Rehabilitation of the remaining historic buildings would be a beneficial effect.

Maximum demolition = 220,000 sf

Maximum new construction = 0

Letterman

The future LDAC will be the largest physical change to the Presidio's built environment. The remaining historic buildings would be rehabilitated. Few other changes would occur in this district.

Maximum demolition = 0

Maximum new construction = 0

Fort Scott

No building demolition beyond what was proposed in the 1994 GMPA is proposed for this district. However, some new construction could occur to accommodate a relocated maintenance function of the Golden Gate Bridge District and a new assembly space to support Fort Scott's reuse. New construction would be sited and designed to be compatible with the setting.

Maximum demolition = 0

Maximum new construction = 50,000 sf

Public Health Service Hospital

The nonhistoric front addition to the former hospital (building 1801) would be demolished and the historic front façade rehabilitated and possibly restored. This would have a beneficial effect on the integrity of the original hospital building. If a suitable tenant could not be found, the hospital building might be demolished, subject to additional analysis. Other historic buildings in this district would be rehabilitated and reused.

Maximum demolition = 130,000 sf

Maximum new construction = 20,000 sf

East Housing

The removal of non-historic housing in this district would have a beneficial effect on the setting of the historic landscape and historic buildings.

Maximum demolition = 100,000 sf

Maximum new construction = 0

South Hills

The removal of the Wherry housing complex would allow for restoration of open space and native plant habitat.

Maximum demolition = 620,000 sf

Maximum new construction = 0 sf

Conclusion

In summary, the No Action Alternative (GMPA 2000) would have an overall beneficial effect on historic resources. Rehabilitation of historic buildings would comply with *Secretary of Interior Standard's for the Rehabilitation of Historic Properties*. The removal of identified historic buildings would be an adverse effect, but the analysis and consultation process for their removal was already completed as part of the 1994 GMPA FEIS. There would not be any

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new significant adverse impact on historic resources, because demolition of historic buildings would not differ from the GMPA. The relatively small amount of new construction would be designed to be compatible with the historic setting. Compatibility of new construction would be accomplished by conformance with the Secretary's Standards, the Final Plan Planning Principles and Planning District Guidelines, and by compliance with Section 106 of the NHPA, as described in the Programmatic Agreement with the NPS, State Historic Preservation Officer (SHPO), and the ACHP. A signed copy of the agreement is included in Appendix D.

Final Plan Alternative

In accordance with the Final Plan Planning Principles and District Guidelines, the Trust will protect the historic character and integrity of the NHLD while allowing changes that will maintain the site's vitality. Every reasonable effort to adapt historic properties to new uses will be made, and new construction and demolition of historic buildings will be minimized as needed to meet policy and plan objectives. The Trust will engage the public in dialogue before making any decision to proceed with a specific proposal that could potentially have a significant adverse effect on a historic resource. The Presidio Trust will utilize the process for consultation as stipulated in the signed Programmatic Agreement to minimize adverse effects on historic resources and ensure the preservation and protection of the NHLD.

Building Rehabilitation

Similar to the No Action Alternative (GMPA 2000), rehabilitation and reuse of historic structures would occur in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (NPS 1992) and the *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* (NPS 1995). Every reasonable effort would be made to incorporate compatible adaptive uses that require minimal alteration of the character defining materials, features, spaces and spatial relationships of historic buildings and their settings, while meeting financial and other goals. In cases where adequate historical documentation exists, historic buildings may be partially restored to permit better understanding of their significance, which would have a beneficial effect on historic resources. This may involve the

removal of later additions to historic buildings and restoration of documented historic features.

With regard to housing, the Final Plan Alternative emphasizes the subdivision of non-historic residential buildings, and/or conversion of non-residential buildings to residential use, as a way to minimize the amount of needed new residential construction. Historic residential buildings could be subdivided in some cases, and historic non-residential or group housing (e.g., dormitories, barracks) buildings could be converted to use as dwelling units. While the precise buildings that would be subject to subdivision or conversion have not been determined, mitigation requiring conformance with the Secretary of the Interior's Standards would ensure no adverse effect on the buildings involved.

Stabilization and Maintenance

Tenants may not be found immediately for all of the buildings. The Presidio Trust is developing a cyclical maintenance program to prevent damage to historic fabric and ensure that buildings are well maintained, until such time as they are rehabilitated and occupied. This plan will include guidelines for actual "moth-balling," preserving and monitoring vacant buildings and will include directives for physical inspections and routine monitoring for deterioration. If deterioration is then identified, actions will be taken to arrest further impacts. The Trust currently implements routine maintenance activities including painting, roof and window repairs, and other actions which help to stabilize historic buildings. The Final Plan Alternative would also provide for the preservation and protection of the historic coastal defense batteries within Area B. The NPS Manual for the Preservation of Coast Batteries will be used as a guide for these efforts.

Demolition

Under the Final Plan Alternative, a maximum of up to 1.07 million sf of buildings could be demolished (approximately 50,000 sf less than under the No Action Alternative). The majority of this demolition would be non-contributing buildings in the South Hills, East Housing, and PSH Planning Districts. Demolition of non-contributing buildings would not impair the integrity of the NHLD, and could improve the NHLD by removing elements

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that are not consistent with its period of significance. Maximum levels of demolition are provided for each Planning District (see below).

Under the Final Plan Alternative, demolition of historic buildings would be minimized. However, historic structures that may not be cost-effectively rehabilitated or re-used and that are identified for demolition in the GMPA would be evaluated for possible demolition or replacement. Consistent with the Trust Act, other buildings would also be evaluated for possible demolition and replacement based on the cost effectiveness of their rehabilitation and reuse. Any loss of buildings that contribute to the significance of the NHLD would be an adverse effect, however, the Presidio Trust would ensure overall integrity of the NHLD would be preserved and protected, as committed to in the final Plan. The decision-making process for building demolition or replacement will be subject to public notice, outreach, environmental review, and consultation with historic preservation agencies (as stipulate in the signed Programmatic Agreement) to fulfill the Trust's obligations under Section 106 of the NHPA. Specific mitigation measures would be developed at that time in consultation with the State Historic Preservation Officer, the ACHP, and the NPS.

New Construction

A maximum of 710,000 sf of new (replacement) space could be constructed under the Final Plan Alternative (approximately 540,000 sf more than under the No Action Alternative). Under the Final Plan Alternative, every reasonable effort will be made to adapt historic properties to new uses and to minimize new construction. New construction would include building additions, an annex adjacent to an existing building, infill buildings set within an existing cluster or buildings, or as stand-alone structures in developed areas. New construction will primarily be undertaken as a means to encourage reuse of historic buildings – to enhance the function of an existing historic building or to make their rehabilitation and reuse economically viable. In other cases, new construction would be considered to achieve other plan objectives.

The exact location of new construction is not known at this time, however, new construction will only occur in existing areas of development, and only as necessary to replace building space that is removed. New buildings would be

sited to minimize impacts on adjacent resources and be designed to be compatible with the historic setting. New construction will be used to reinforce historic character-defining features of an area and its design will ensure that the association, feeling, and setting of the significant elements and the integrity of the NHLD are protected. Maximum levels of new construction are provided for each planning district (see below).

New construction could have an adverse affect on individual buildings. However, since new construction would be in conformance with the PTMP Planning Principles, the Planning District Guidelines, and other stipulations as outlined in the Programmatic Agreement, including subsequent analysis, review, and public input, these actions, neither individually nor collectively will impair the integrity of the NHLD. The Planning Principles require that the mass, scale, style and color of new construction be compatible with the historic setting of the Presidio. The Planning District Guidelines identify character-defining features of each district that will need to be maintained or enhanced, and include maximum building height by district, for new construction.

District Descriptions

The following are general actions contemplated for each of the Planning Districts that could affect cultural resources:

Main Post

Historic buildings would be rehabilitated and returned to active use. Some non-historic buildings may be demolished to restore historic settings and views. Additions to historic buildings may be necessary to make their reuse feasible. Stand-alone new construction may also be considered where appropriate – for example, to replace the YMCA if it is removed for restoration of Tennessee Hollow, or to re-establish historic spatial patterns, such as the historic edge of the Old Parade ground. New building construction would be subject to additional analysis, public input, and consultation under the Programmatic Agreement.

Maximum demolition = 20,000 sf

Maximum new construction = 110,000 sf

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Crissy Field (Area B)

Some non-historic buildings in this district may be demolished to increase open space and to enhance the visual and historic setting. Limited new construction would be considered primarily to make reuse of historic structures possible. For example, a low-scale annex to Stilwell Hall could enable the building's reuse as lodging.

Maximum demolition = 40,000 sf

Maximum new construction = 70,000 sf

Letterman

The future Letterman Digital Arts Center will be the largest physical change to the Presidio's built environment. Other changes in the Letterman district may include demolishing non-historic buildings and replacing them with more compatible structures that would reinforce the historic setting of the old hospital buildings and former courtyard, and create a more pedestrian-scaled environment. Historic buildings would be rehabilitated.

Maximum demolition = 30,000 sf

Maximum new construction = 160,000 sf

Fort Scott

Demolition of minor outbuildings will be considered at Fort Scott, as will additions to historic buildings or building clusters to facilitate their reuse. For example, a meeting space may be required to support the educational programs envisioned for Fort Scott. Non-historic housing may be replaced with more compatible structures in the area behind the Pilots Row houses (North Fort Scott). The Golden Gate Bridge District may also relocate its maintenance functions from the bridge toll plaza to both existing and new buildings in this district, consistent with the No Action Alternative (GMPA 2000). Historic buildings would be rehabilitated for new uses, or stabilized (such as some of the coastal defense structures).

Maximum demolition = 70,000 sf

Maximum new construction = 170,000 sf

Public Health Service Hospital

Similar to the No Action Alternative (GMPA 2000), the non-historic wings of the historic hospital would be considered for removal to allow for restoration of the historic façade. If this occurs, the major shift in square footage that may occur in this district would be replacement of the non-historic wings' square footage with buildings elsewhere on the site. Other historic buildings within the complex would be rehabilitated for new uses. Similar to the No Action Alternative, if a suitable tenant could not be found for building 1801, its removal and replacement could be considered in the future, subject to further analysis.

Maximum demolition = 130,000 sf

Maximum new construction = 130,000 sf

East Housing

Similar to the No Action Alternative (GMPA 2000), there would be a decrease in building square footage by removing non-historic housing in this district to restore the Tennessee Hollow riparian corridor. This could allow for rehabilitation of the historic setting for historic residences. Some replacement housing could be constructed in remaining non-historic building clusters if required to meet plan objectives.

Maximum demolition = 100,000 sf

Maximum new construction = 70,000 sf

South Hills

The phased removal of the non-historic Wherry Housing complex (Baker Beach Apartments) and some of the East and West Washington Boulevard housing would allow for restoration of open space, native plant habitat, and wildlife corridors.

Maximum demolition = 680,000 sf

Maximum new construction = 0

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Conclusion

Under this Final Plan Alternative, a commitment to the preservation of the integrity of the NHLD is made, and processes are set in place for assessing and minimizing the effects of future actions that could have the potential to adversely effect the NHLD. The overall effect on historic resources would be beneficial. Rehabilitation of historic buildings, would comply with the Secretary of Interior's Standard for the Rehabilitation of Historic Properties. Under the Final Plan Alternative, there may be some adverse effects on individual historic resources, through the course of building demolition and/or new construction. These potential actions would be subject to further planning and consultation with historic preservation agencies and the public. The finalized PA outlines criteria and processes for the Trust to use in determining effects and pursuing consultation with the ACHP, SHPO, NPS and other parties, as necessary, for actions that could adversely effect historic resources. Through the application of the Planning Principles, the Planning District Guidelines, and Section 106 consultation as articulated in the Programmatic Agreement (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not impaired. A signed copy of the Programmatic Agreement is included in Appendix D.

Final Plan Variant

Building Rehabilitation

Similar to the Final Plan Alternative, historic building rehabilitation would comply with the *Secretary of Interior's Standards for the Rehabilitation of Historic Properties*, and thus would constitute a beneficial effect of the alternative.

With regard to housing, the Final Plan Variant emphasizes the subdivision of residential buildings, and/or conversion of non-residential buildings to residential use, as a way to avoid new residential construction. Historic residential buildings could be subdivided in some cases, and historic non-residential or group housing (e.g., dormitories, barracks) buildings could be converted to use as dwelling units. Mitigation requiring conformance with the

Secretary of the Interior's Standards would ensure no adverse effect on the buildings involved.

Stabilization and Maintenance

Similar to the Final Plan Alternative, cyclical maintenance will prevent damage to historic fabric.

Demolition

Under the Final Plan Variant, up to 1.25 million sf of buildings could be demolished to allow for expanded open space including wetlands expansion at Crissy Field and native plant habitat restoration in the southwest part of the Presidio (approximately 130,000 sf more than under the No Action Alternative). The majority of this demolition would be non-contributing buildings in the South Hills, East Housing, Crissy Field, and PSH Planning Districts. Demolition of non-contributing buildings would not impair the integrity of the NHLD, and could improve the NHLD by removing elements that are not consistent with its period of significance. Maximum levels of demolition are provided for each Planning District (see below).

Demolition of some historic warehouses on Mason Street for the expansion of Crissy Field wetlands would be considered an adverse effect, but every effort would be made to otherwise protect and preserve the integrity of the NHLD. If the Trust proposes demolition of a historic building the proposal will be subject to public notice, outreach, environmental review, and consultation with historic preservation agencies (as stipulated in the signed Programmatic Agreement) to fulfill the Trust's obligations under Section 106 of the NHPA. Specific mitigation measures would be developed at that time in consultation with the State Historic Preservation Officer, the ACHP, and the NPS.

New Construction

There is no new construction proposed under the Final Plan Variant.

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District Descriptions

The following are general actions contemplated for each of the Planning Districts that could affect cultural resources:

Main Post

Historic buildings would be rehabilitated and returned to active use. Some non-historic buildings may be demolished to restore historic settings and views. No new additions to historic buildings or construction of new buildings would be allowed.

Maximum demolition = 20,000 sf

Maximum new construction = 0 sf

Crissy Field (Area B)

Some non-historic buildings in this district may be demolished to increase open space and to enhance the visual and historic setting. Four of the historic warehouses on Mason Street could also be removed for the expansion of the Crissy Marsh.

Maximum demolition = 270,000 sf

Maximum new construction = 0 sf

Letterman

The future Letterman Digital Arts Center will be the largest physical change to the Presidio's built environment. Other changes in the Letterman district may include demolishing non-historic buildings for the restoration of Tennessee Hollow.

Maximum demolition = 40,000 sf

Maximum new construction = 0 sf

Fort Scott

Demolition of minor outbuildings will be considered at Fort Scott similar to the demolition proposed in the Final Plan Alternative.

Maximum demolition = 10,000 sf

Maximum new construction = 0 sf

Public Health Service Hospital

Similar to the No Action Alternative, the non-historic wings of the historic hospital would be considered for removal to allow for restoration of the historic façade. This building would be converted to residential use. Other historic buildings within the complex would be rehabilitated for new uses.

Maximum demolition = 130,000 sf

Maximum new construction = 0 sf

East Housing

Similar to the No Action Alternative, there would be a decrease in building square footage by removing non-historic housing in this district to restore the Tennessee Hollow riparian corridor. This could allow for rehabilitation of the historic setting for historic residences.

Maximum demolition = 100,000 sf

Maximum new construction = 0 sf

South Hills

The phased removal of the non-historic Wherry Housing complex (Baker Beach Apartments) and some of the East and West Washington Boulevard housing would allow for restoration of open space, native plant habitat, and wildlife corridors.

Maximum demolition = 680,000 sf

Maximum new construction = 0

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Conclusion

In summary, the Final Plan Variant would have a beneficial effect on the NHLD through the course of building rehabilitation and preservation, although some of the Mason Street warehouses would be removed, in addition to the eleven buildings proposed in the No Action Alternative (GMPA 2000). The Trust would attempt to minimize effects on the NHLD status through conformance with the PTMP Planning Principles and the Planning District Guidelines. The effect on the integrity of the NHLD through any historic building demolitions would be determined during Section 106 compliance review and consultation. This would entail consultation with the ACHP, SHPO, NPS, and consulting parties according to the Programmatic Agreement included in Appendix D.

Resource Consolidation Alternative

Building Rehabilitation

Similar to the Final Plan Alternative, historic building rehabilitation would comply with the *Secretary of Interior's Standards for the Rehabilitation of Historic Properties*, and thus would constitute a beneficial effect of the alternative.

Stabilization and Maintenance

Similar to the Final Plan Alternative, cyclical maintenance will prevent damage to historic fabric.

Building Demolition

Under the Resource Consolidation Alternative, up to 1.91 million sf of existing building space could be demolished to allow for expanded open space including wetlands expansion at Crissy Field and native plant habitat restoration in the southwest part of the Presidio. This amount of demolition would be substantially more than under either the No Action (GMPA 2000) or Final Plan Alternatives, and would include most non-historic buildings and removal of the entire PSH complex, including the former hospital and its associated seventeen historic outbuildings, to create open space. The majority

of buildings to be demolished would be in the south of the Presidio. An additional 640,000 (+/-) sf are anticipated to be in the Crissy Field, Main Post, Fort Scott, East Housing, and Letterman Planning Districts (see district descriptions below). Demolition in these areas could include and adversely affect contributing buildings.

Demolition of the PSH complex, including removal of all the historic buildings and cultural landscapes, would be considered an adverse effect of this alternative. Cultural landscape features from the historic PSH complex would be incorporated into the new landscaping, but would not fully offset the removal of this historic complex. Demolition of the PSH complex and any other contributing buildings not called out for demolition in the GMPA would have an adverse affect on the NHLD, but every effort would be made to protect and preserve the integrity of the overall NHLD. If the Trust proposes demolition of a historic building or new construction, the proposal will be subject to public notice, outreach, environmental review, and consultation with historic preservation agencies (as stipulated in the signed Programmatic Agreement) to fulfill the Trust's obligations under Section 106 of the NHPA. Specific mitigation measures would be developed at that time in consultation with the State Historic Preservation Officer, the ACHP, and the NPS.

New Construction

A maximum of 1.25 million sf of new (replacement) space could be constructed under the Resource Consolidation Alternative, which is more than under either the No Action (GMPA 2000) or Final Plan Alternatives. New construction would primarily occur within the planning districts in the northern part of the park, and would be considered as replacement square footage for the large amount of built space removed in the South Hills areas. The exact location of new construction is not known at this time. Consequently, it is possible that new construction would occur in the vicinity of historic and contributing buildings. New construction that could have an adverse effect would be subject to further review under NEPA and Section 106 of the NHPA, as provided in the Programmatic Agreement and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan. (See Final Plan Alternative discussion) New construction would be designed and sited to be compatible with the historic

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setting, and would be limited to the replacement of existing structures of similar size in existing areas of development as provided by the Trust Act and the Planning District Guidelines. Through the application of the Planning District Guidelines, and Section 106 consultation (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not substantially impaired. The Resource Consolidation Alternative's commitment to ensure the compatibility of new construction could ultimately preclude the introduction of the maximum levels of potential new construction identified for each planning district.

District Descriptions

The following are general actions contemplated for each of the Planning Districts, which could effect cultural resources:

Main Post

Under this alternative, the amount of new construction at the Main Post would be greater than any of the other alternatives. Non-historic buildings would be removed to restore historic view corridors and settings, and new construction would be sited and designed in keeping with the historic character of the district. New construction could allow for the restoration or re-establishment of historic patterns and spatial relationships between building clusters and formal landscape areas. The amount of total square footage for the main post would reinforce its function as the community and visitor center of the Presidio.

Maximum demolition = 100,000 sf

Maximum new construction = 330,000

Crissy Field (Area B)

Non-historic buildings would be removed at Crissy Field in order to expand the existing wetlands south of Mason Street and allow for an increase in open space. Some replacement construction would occur but would be sited away

from the expanded wetlands and in keeping with the historic building clusters at the east and west ends.

Maximum demolition = 220,000 sf

Maximum new construction = 150,000 sf

Letterman

The Letterman Complex district would have the largest amount of new construction, compared to the other districts under this alternative. The net increase of built space would be approximately 400,000 sf in this district. This new construction would occur outside of the 23-acre LDAC site and would primarily be in the western portion of the district. New construction would reinforce the historic patterns of the former hospital complex, and would primarily be for office uses.

Maximum demolition = 80,000

Maximum new construction = 470,000 sf

Fort Scott

The level of change within the Fort Scott district would be similar to the Final Plan Alternative, and the integrity of the historic setting would be respected.

Maximum demolition = 80,000 sf

Maximum new construction = 150,000 sf

Public Health Service Hospital

The entire building complex (both historic and non-historic structures) at the former hospital site would be removed and native habitats restored and open space with recreational opportunities created. These removals of contributing structures would constitute an adverse effect on the NHLD.

Maximum demolition = 400,000 sf

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Maximum new construction = 0

East Housing

The level of demolition within the East Housing District would be greater than the other alternatives, but would include a fair amount of replacement construction for non-historic housing which is removed. Demolition of non-historic housing would allow for the Tennessee Hollow stream corridor restoration. New residential construction would be sited and designed to be compatible with both the historic housing clusters as well as with the restored natural systems.

Maximum demolition = 160,000 sf

Maximum new construction = 150,000 sf

South Hills

Similar to the No Action (GMPA 2000) and the Final Plan Alternatives, all of the Wherry Housing complex would be removed as well as the non-historic East and West Washington housing clusters.

Maximum demolition = 870,000 sf

Maximum new construction = 0

Conclusion

In summary, the Resource Consolidation Alternative would have a beneficial effect on the NHLD through the course of building rehabilitation and preservation. However, there would also be an adverse effect on the NHLD due to the proposed demolition of the historic PSH complex. The effects due to demolition would be more severe than under either the No Action (GMPA 2000) or Final Plan Alternatives, because more demolition would occur, and because the PSH would be removed. However, through the course of building demolition and new construction, the Trust would attempt to minimize effects on the NHLD status through conformance with the PTMP Planning Principles and the Planning District Guidelines. The effect on the integrity of the NHLD through the PSH building demolitions could not be

determined until the full Section 106 compliance review and consultation process was completed. This would entail consultation with the ACHP, SHPO, NPS, and consulting parties according to the Programmatic Agreement included in Appendix D. The current agreement would be expanded or a new agreement pursued to address the specific proposed demolition of the PSH complex.

Sustainable Community Alternative

Building Rehabilitation

In accordance with Planning Principles, the Sustainable Community Alternative would preserve, rehabilitate and reuse historic structures to the maximum extent feasible. The effects of historic building rehabilitation would be similar as those under the Final Plan Alternative. Rehabilitation would occur in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (NPS 1992) and the *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* (NPS 1995). Every reasonable effort would be made to incorporate compatible adaptive uses that require minimal alteration of the character defining materials, features, spaces and spatial relationships of historic buildings and their settings, while meeting financial and other goals.

Stabilization and Maintenance

Similar to Final Plan Alternative, cyclical maintenance will prevent damage to historic fabric.

Building Demolition

Under the Sustainable Community Alternative, up to 0.89 million sf of built space could be demolished, which is the least amount of demolition of any of the alternatives except for the Minimum Management Alternative. While most of the demolition would affect non-contributing buildings, such as Wherry housing, the approximately 110,000 sf of demolition that could occur in the Main Post and Crissy Field Planning Districts could include historic and/or contributing buildings. Although the total potential for demolition of historic buildings would be reduced under this alternative, the possibility that historic

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buildings would be removed would not be eliminated. Any loss of buildings that contribute to the significance of the NHLD would be an adverse effect, however, the Presidio Trust would ensure overall integrity of the NHLD would be preserved and protected, as committed to in the final Plan. If the Trust proposes demolition of a historic building or new construction, the proposal will be subject to public notice, outreach, environmental review, and consultation with historic preservation agencies (as stipulated in the signed Programmatic Agreement) to fulfill the Trust's obligations under Section 106 of the NHPA. Specific mitigation measures would be developed at that time in consultation with the State Historic Preservation Officer, the ACHP, and the NPS.

New Construction

Under this alternative, there could be approximately 620,000 sf of new (replacement) construction. The exact location of new construction is not known at this time, but it would occur in areas of existing development. Consequently, it is possible that new construction would occur in the vicinity of historic and contributing buildings. Similar to the Final Plan Alternative, new construction that could have an adverse effect would be subject to further review under NEPA and Section 106 of the NHPA, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan. New construction would be designed and sited to be compatible with the historic setting, and would be limited to the replacement of existing structures of similar size in existing areas of development as provided by the Trust Act and the Planning District Guidelines. Through the application of the Planning District Guidelines, and Section 106 consultation (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not impaired.

District Descriptions

The following are general actions contemplated for each of the Planning Districts, which could effect cultural resources:

Main Post

Under this alternative, there would be very little demolition but a significant level of new infill construction in addition to reuse of existing buildings. New construction would be sited and designed in keeping with the historic character of the district and would allow for the restoration or re-establishment of historic patterns and spatial relationships between building clusters and formal landscape areas. The amount of total square footage for the Main Post would reinforce its function as the community and visitor center of the Presidio.

Maximum demolition = 40,000 sf

Maximum new construction = 270,000

Crissy Field (Area B)

Some non-historic buildings would be removed at Crissy Field and some replacement construction would occur to support new uses and activities. New construction would be sited and designed to be in keeping with the historic building clusters at the east and west ends.

Maximum demolition = 70,000 sf

Maximum new construction = 140,000 sf

Letterman

The Letterman Complex district would have a minimal level of change from existing conditions. There would be some minor building demolition and no new construction. Opportunities to reinforce the historic courtyard space through new construction in West Letterman would not occur.

Maximum demolition = 20,000

Maximum new construction = 0

Fort Scott

There would be a minimal level of change within the Fort Scott district from existing conditions. Some minor building demolition would occur and no new

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construction would be allowed. The emphasis in this district would be on the rehabilitation and reuse of all buildings (historic and non-historic).

Maximum demolition = 30,000 sf

Maximum new construction = 0

Public Health Service Hospital

There would be very little change from existing conditions. The non-historic wings of the former hospital building would be retained and rehabilitated for reuse along with the former hospital and outbuildings. There would be some minor level of demolition and some new construction, to facilitate reuse of the existing buildings, would be allowed.

Maximum demolition = 10,000 sf

Maximum new construction = 20,000 sf

East Housing

There would be a significant level of demolition of non-historic housing within the East Housing District, and this would be counterbalanced by a significant level of new replacement construction for more compatible residential units than exists today. Demolition of non-historic housing would allow for the Tennessee Hollow stream corridor restoration. New residential construction would be sited and designed to be compatible with both the historic housing clusters as well as with the restored natural systems. The overall density of this district would be increased, and care would be taken to preserve the character and feel of the historic housing clusters and their streetscapes.

Maximum demolition = 100,000 sf

Maximum new construction = 190,000 sf

South Hills

Similar to the No Action Alternative (GMPA 2000), all of the non-historic Wherry Housing complex would be removed and no replacement construction would occur.

Maximum demolition = 620,000 sf

Maximum new construction = 0

Conclusion

Similar to the Final Plan Alternative, overall effects on historic resources would be beneficial as a result of rehabilitation of historic buildings, which would comply with *Secretary of Interior Standard's for the Rehabilitation of Historic Properties*. The integrity of the NHLD would be respected, and its status preserved. Under this alternative, there may be some adverse effects on individual historic resources through the course of building demolition and/or new construction. These potential actions would be subject to further planning and consultation with historic preservation agencies and the public. The finalized Programmatic Agreement outlines criteria and processes for the Trust to use in determining effects and pursuing consultation with the ACHP, SHPO, NPS and other parties, as necessary, for actions that could adversely effect historic resources. Through the application of the Planning Principles, the Planning District Guidelines, and Section 106 consultation pursuant to the Programmatic Agreement (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not impaired. A signed copy of the Programmatic Agreement is included in Appendix D.

Cultural Destination Alternative

Building Rehabilitation

This alternative would be similar to the Final Plan Alternative, except that it would increase the amount of demolition, and potential new (replacement) construction. As with the Final Plan Alternative, historic structures would be

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preserved, rehabilitated and reused to the maximum extent feasible. Rehabilitation would occur in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (NPS 1992) and the *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* (NPS 1995). Every reasonable effort would be made to incorporate compatible adaptive uses that require minimal alteration of the character defining materials, features, spaces and spatial relationships of historic buildings and their settings, while meeting financial and other goals.

Stabilization and Maintenance

Similar to the Final Plan Alternative, cyclical maintenance would prevent damage to historic fabric.

Building Demolition

There would be a potential for demolition of up to 1.37 million sf in this alternative, which is more than under either the No Action (GMPA 2000) or Final Plan Alternatives. The majority of demolitions would affect non-contributing, non-historic structures, in the Fort Scott, East Housing and South Hills Planning Districts, including Wherry Housing and residential buildings along East and West Washington Blvd. Demolition of non-contributing buildings would not impair the integrity of the NHLD, and could improve the NHLD by removing elements that are not consistent with its period of significance.

Under the Cultural Destination Alternative, historic structures that may not be cost-effectively rehabilitated or re-used would also be evaluated for possible demolition or replacement. Any loss of buildings that are individually historically significant or that contribute to the significance of the NHLD would be an adverse affect.

The extent to which demolitions would differ from those proposed in the GMPA, and the potential for impacts to the NHLD, cannot be assessed until more specific information is developed. Any loss of buildings that contribute to the significance of the NHLD would be an adverse effect, however, the Presidio Trust would ensure overall integrity of the NHLD would be preserved and protected, as committed to in the final Plan. If the Trust

proposes demolition of a historic building or new construction, the proposal will be subject to public notice, outreach, environmental review, and consultation with historic preservation agencies (as stipulate in the signed Programmatic Agreement) to fulfill the Trust's obligations under Section 106 of the NHPA. Specific mitigation measures would be developed at that time in consultation with the State Historic Preservation Officer, the ACHP, and the NPS.

New Construction

A maximum of 1.37 million sf of new space could be constructed under the Cultural Destination Alternative. This alternative would have the greatest amount of new construction. The exact location of new construction is not known at this time, but would occur in areas of existing development. Consequently, it is possible that new construction would occur in the vicinity of historic and contributing buildings. New construction that could have an adverse effect would be subject to further review under NEPA and Section 106 of the NHPA, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan. New construction would be designed and sited to be compatible with the historic setting, and would be limited to the replacement of existing structures of similar size in existing areas of development as provided by the Trust Act and the Planning District Guidelines. Through the application of the Final Plan Planning District Guidelines, and Section 106 consultation pursuant to the Programmatic Agreement (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not impaired. The Trust's commitment to ensure the compatibility of new construction could ultimately preclude the introduction of the maximum levels of potential new construction identified for each planning district.

District Descriptions

The following are general actions contemplated for each of the Planning Districts, which could effect cultural resources:

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Main Post

Under this alternative, there would be very little demolition but a greater level of new infill construction than the No Action (GMPA 2000) and Final Plan Alternatives. New construction would be sited and designed in keeping with the historic character of the district and would allow for the restoration or re-establishment of historic patterns and spatial relationships between building clusters and formal landscape areas. The amount of total square footage for the main post would reinforce its function as the community and visitor center of the Presidio.

Maximum demolition = 50,000 sf

Maximum new construction = 240,000

Crissy Field (Area B)

Some non-historic buildings would be removed at Crissy Field and some replacement construction would occur to support new uses and activities. A significant level of new construction would be allowed to support new uses and activities under this alternative. New construction would be sited and designed to be in keeping with the historic building clusters, and would complement remaining non-historic building clusters as well.

Maximum demolition = 50,000 sf

Maximum new construction = 290,000 sf

Letterman

The Letterman Complex district, similar to the Resource Consolidation Alternative, would have a significant amount of new construction, compared to the other districts under this alternative. Some demolition would occur and new construction would primarily be in the western portion of the district. New construction would reinforce the historic patterns of the former hospital complex, and would primarily be for office and residential uses.

Maximum demolition = 70,000

Maximum new construction = 410,000

Fort Scott

Similar to the Final Plan Alternative, there would be some building demolition and a significant amount of new construction at Fort Scott. New construction would support an increase in space for residential use as well as lodging and conference activities. For example, a meeting space may be required to support the educational programs envisioned for Fort Scott. Non-historic housing may be replaced with more compatible structures in the area behind the Pilots Row houses (North Fort Scott). The Golden Gate Bridge District may also relocate its maintenance functions from the bridge toll plaza to both existing and new buildings in this district, consistent with the No Action Alternative (GMPA 2000).

Maximum demolition = 80,000 sf

Maximum new construction = 200,000 sf

Public Health Service Hospital

Similar to the Final Plan Alternative, the non-historic hospital wings could be removed at that square footage replaced elsewhere within the district.

Maximum demolition = 130,000 sf

Maximum new construction = 130,000 sf

East Housing

Similar to the Final Plan Alternative, there would be a significant level of demolition of non-historic housing within the East Housing District, and a near equivalent amount of replacement construction for more compatible residential units. Demolition of non-historic housing would allow for the Tennessee Hollow stream corridor restoration. New residential construction would be sited and designed to be compatible with both the historic housing clusters as well as with the restored natural systems.

Maximum demolition = 130,000 sf

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Maximum new construction = 100,000 sf

South Hills

Similar to the Resource Consolidation Alternative, all of the non-historic Wherry Housing complex as well as the East and West Washington Blvd. housing clusters would be removed and no replacement construction would occur.

Maximum demolition = 860,000 sf

Maximum new construction = 0

Conclusion

Similar to the Final Plan Alternative, a commitment to the preservation of the integrity of the NHLD is made, and processes are set in place for assessing and minimizing the effects of future actions that could have the potential to adversely effect the NHLD. Rehabilitation of historic buildings, done in compliance with the *Secretary of Interior's Standard for the Rehabilitation of Historic Properties*, would have a beneficial effect on the NHLD. Under this alternative, there may be some adverse effects on individual historic resources, through the course of building demolition and/or new construction. These potential actions would be subject to further planning and consultation with historic preservation agencies and the public. The finalized PA outlines criteria and processes for the Trust to use in determining effects and pursuing consultation with the ACHP, SHPO, NPS and other parties, as necessary, for actions that could adversely effect historic resources. Through the application of the Planning Principles, the Planning District Guidelines, and Section 106 consultation (including consultation regarding site-specific design guidelines and/or schematic designs for new construction) the Trust would ensure that new construction is compatible with the existing historic setting, and that the integrity of the NHLD is not impaired.

Minimum Management Alternative

Building Rehabilitation

Under the Minimum Management Alternative, there would be no demolition or new construction. Existing buildings would be rehabilitated and leased for new uses garnering maximum possible financial return. Rehabilitation of buildings that contribute to the NHLD would conform to essential code requirements, the *Guidelines for Rehabilitating Buildings on the Presidio of San Francisco* (NPS 1995) and the *Secretary of the Interior's Standards for the Rehabilitation of Historic Properties* (NPS 1992). The Secretary's Standards direct the manner in which historic buildings are altered, in order to ensure that historic integrity is retained and to ensure that rehabilitation is below the threshold of an adverse effect. Rehabilitation projects would repair and restore elements of contributing buildings that could deteriorate if no maintenance or reuse of the resource were to occur.

Stabilization and Maintenance

Same as Final Plan Alternative.

Building Demolition

No demolition would occur under this alternative.

New Construction

No new construction would occur under this alternative.

Conclusion

Rehabilitation of historic buildings would comply with the Secretary's Standards and in general would have a beneficial effect on the NHLD. However, because there would be no building demolition of non-historic structures, the opportunity to restore and rehabilitate of historic settings would be missed. New construction would also not be available as a way to facilitate rehabilitation and reuse of historic buildings.

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IMPACTS ON THE PRESIDIO CULTURAL LANDSCAPE

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), there would be a substantial level of non-historic building demolition to expand open space, as well as a commitment to enhance natural areas, including areas in the South Hills, Tennessee Hollow, and an expanded Crissy Field marsh. Native plant communities and riparian corridors would be restored and the historic forest would be rehabilitated and preserved. Open space within Area B would increase from about 695 acres to about 794 acres, and native plant habitat would expand from 70 acres to about 210 acres. Habitat supporting rare or endangered species would be enhanced. Exotic plants would be removed. Wetland features would be protected, enhanced and restored where feasible. Historic linkages that were once physically or visually connected, such as the Main Post to Crissy Field connection, would be reestablished.

These and other changes to the cultural landscape would be generally beneficial. Features identified as significant (Land and Community Associates 1992) would generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

The approximately 170,000 sf of new (replacement) construction that could occur under the No Action Alternative (GMPA 2000) would be subject to several controls to ensure compatibility with surrounding buildings and the NHLD. Specifically, the GMPA EIS mitigation calls for preparation of guidelines for compatible new construction, and compliance with the *Secretary of Interior's Standards for the Rehabilitation of Historic Properties*, which would ensure that new construction is compatible with existing historic buildings and the NHLD. Under this alternative, new construction would also be subject to further review under Section 106 of the NHPA, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan.

Final Plan Alternative

The Final Plan Alternative would involve less potential building demolition and more potential new construction than the No Action Alternative (GMPA 2000). In other ways, the Final Plan Alternative would be similar to the No Action Alternative (GMPA 2000) with regards to the Presidio cultural landscape. Features identified as significant (Land and Community Associates, 1992) would generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

New (replacement) construction would be subject to several controls to ensure compatibility with surrounding buildings and the NHLD. Specifically, new construction would be subject to further review under Section 106 of the NHPA as outlined in the Programmatic Agreement, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan.

Final Plan Variant

Under the Final Plan Variant, there would be more building demolition than the No Action Alternative (GMPA 2000) and no new construction. As with the GMPA 2000 and Final Plan Alternatives, the non-historic Wherry housing would be removed, along with some non-historic housing in the Tennessee Hollow Planning District. These demolitions would allow for natural resource enhancements and habitat expansion. In addition, some historic and non-historic buildings would be removed to allow expansion of Crissy Field marsh to a 30-acre tidal wetland.

With the exception of the changes on Mason Street, the changes to the cultural landscape would be generally beneficial. Features identified as significant (Land and Community Associates, 1992) would generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside

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exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

Resource Consolidation Alternative

The Resource Consolidation Alternative would have the greatest amount of building demolition of any alternative, and would result in the most noticeable changes to the Presidio cultural landscape. As with the No Action (GMPA 2000) and Final Plan Alternatives, the non-historic Wherry housing would be removed, along with some non-historic housing in the Tennessee Hollow Planning District. These demolitions would allow for natural resource enhancements and habitat expansion. In addition, non-historic buildings would be removed to allow expansion of Crissy Field marsh, similar to the No Action Alternative (GMPA 2000), and historic and non-historic buildings and landscape features at the PSH and along East and West Washington would be removed to allow for expanded natural areas in the southern portion of the park.

Native plant communities and riparian corridors would be restored and the historic forest would be rehabilitated and preserved. Open space within Area B would increase from about 695 acres to about 838 acres, more than in any other alternative. Native plant habitat would also be expanded, similar to the No Action (GMPA 2000) and the Final Plan Alternatives. Habitat supporting rare or endangered species would be enhanced. Exotic plants would be removed. Wetland features would be protected, enhanced and restored where feasible. Historic linkages that were once physically or visually connected, such as the Main Post to Crissy Field connection, would be reestablished.

With the exception of changes at the PSH complex, the changes to the cultural landscape under this alternative would be generally beneficial. Features identified as significant by Land and Community Associates in 1992 would generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

Substantial new construction would be subject to several controls to ensure compatibility with surrounding buildings and the NHLD. Specifically, new construction would be subject to further review under Section 106 of the NHPA as outlined in the Programmatic Agreement, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan.

Sustainable Community Alternative

The Sustainable Community Alternative would involve the least amount of demolition of any alternative, with the exception of the Minimum Management Alternative, and would result in mostly beneficial changes to the cultural landscape, similar to the No Action (GMPA 2000) and the Final Plan Alternatives. Features identified as significant by Land and Community Associates in 1992 would generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

The Sustainable Community Alternative would involve somewhat more new construction than the No Action Alternative (GMPA 2000), and slightly less than the Final Plan Alternative. New construction would be subject to several controls to ensure compatibility with surrounding buildings and the NHLD. Specifically, new construction would be subject to further review under Section 106 of the NHPA as outlined in the Programmatic Agreement, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan.

Cultural Destination Alternative

The Cultural Destination Alternative would have effects on the Presidio cultural landscape similar to the Final Plan Alternative, except that more non-historic housing would be removed to expand open space areas in the south of the park, and more new construction would occur in the north. Features identified as significant by Land and Community Associates in 1992 would

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generally be maintained or enhanced. The historic forest would be rehabilitated, and vegetation would be removed in other areas to restore historic vistas and views. Site improvements, such as removal of excess pavement, introduction of wayside exhibits, signs, site furniture, trails, paths, and lighting, would be compatibly designed to ensure no adverse effect on the NHLD.

New construction would be subject to several controls to ensure compatibility with surrounding buildings and the NHL. Specifically, new construction would be subject to further review under Section 106 of the NHPA as outlined in the Programmatic Agreement, and would have to comply with Planning Principles and Planning District Guidelines contained in the Final Plan.

Minimum Management Alternative

Under the Minimum Management Alternative there would be no demolition or new construction. The primary potential negative impact under this alternative would be neglect. Without appropriate attention to the rehabilitation and enhancement of contributing landscape features, portions of the cultural landscape could be neglected or removed.

MITIGATION MEASURES

The following mitigation measures apply to all alternatives unless otherwise noted.

Measures Adapted from the GMPA EIS

CR-1 Documentation of Buildings to be Relocated or Removed. Before historic buildings or additions to historic buildings are relocated or removed, appropriate mitigating measures would be determined in consultation with the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation during the Section 106 consultation process. Measures would include recordation according to the Historic American Building Survey Standards. In addition, salvage, preservation, and curation of historic building fabric may be warranted in some situations.

CR-2 Code Compliance. As stipulated in the Presidio Trust Act, the Trust would upgrade buildings to meet life/safety standards and to comply with the Americans with Disabilities Act (ADA) as necessary. Rehabilitation of historic buildings would include modification to meet applicable building codes to the extent practicable.

CR-3 Long-Term Maintenance & Preservation of Vacant Buildings. Following rehabilitation of historic buildings, the Trust would ensure that tenants perform continued maintenance, thereby preventing damage to historic features and ensuring that buildings are adequately maintained. A preservation and maintenance program for unoccupied buildings would include: regular inspections, necessary stabilization work to ensure long-term preservation and safe conditions for park visitors; monitoring of the condition of vacant buildings; and prioritization of stabilization and rehabilitation needs to ensure the maximum feasible preservation and protection of park resources.

CR-4 Future Planning to Guide Demolition and New Construction. Before undertaking projects that involve historic building demolition, major new construction or significant changes to the Presidio's historic landscape, the Trust will solicit public input, conduct appropriate environmental analysis, and engage in a consultation process with historic preservation agencies as stipulated in the Programmatic Agreement (see Appendix D). Future projects would conform to the Final Plan Planning Principles, Planning District Guidelines, and the Secretary of the Interior's Standards, in a manner that assures the preservation of the NHLD.

CR-5 Historic Forest Preservation and Rehabilitation. The Trust would complete ongoing studies regarding the character of the Presidio's historic forest, and implementation strategies to guide future actions consistent with the objectives for the historic forest zone within the Presidio Vegetation Management Plan. Strategies would identify appropriate replacement species, tree stand management options, and exact areas for tree removal.

CR-6 Monitor Visitor Impacts on Sensitive Resources. The Trust would monitor sensitive cultural resources, such as historic landscape features and vacant structures, and prioritize actions to reduce any adverse impacts on these resources caused by park visitors and new uses. Potential remedies may

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include temporary closure of areas, protective barriers, and informational signs.

New Mitigation

CR-7 Compliance with Standards for Building and Cultural Landscape Rehabilitation. The Trust would ensure that building rehabilitation projects conform with the *Guidelines for Rehabilitating Buildings at the Presidio of San Francisco* (NPS 1995). If new uses are proposed for historic buildings, or if residential buildings are proposed for subdivision, the Trust would ensure that required building modifications conform with the *Secretary of the Interior Standards for the Rehabilitation of Historic Properties* (NPS 1992). For historic landscape rehabilitation, projects would conform with the *Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes*.

CR-8 Ongoing identification of Historic Properties. Consistent with requirements under Section 110 of the NHPA and the signed PA, the Presidio Trust will continue to evaluate for possible inclusion in the list of contributing resources, those buildings or structures which may become 50 years old or may have achieved exceptional significance since the 1993 NHL Update form was completed. These evaluations would also encompass archeological discoveries.

4.2.2 ARCHAEOLOGY

METHODOLOGY

Section 110 of the NHPA of 1966, as amended, specifies that archaeological resources must be taken into consideration before implementing any federal action. The Archaeological Resources Protection Act (ARPA) of 1979, as amended, defines archaeological resources; requires federal permits for excavation; provides for curation of materials, records, and other data; provides for confidentiality of archaeological site locations; and, in the 1988 amendment, requires the inventorying of public lands for archaeological resources. The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended, outlines the federal government's responsibility for the treatment and ultimate disposition of human burials and grave-related materials. These laws, along with their implementing

regulations and policies have been followed in analyzing potential impacts on archaeological resources.

POTENTIAL IMPACTS

DESTRUCTION OF, OR DAMAGE TO, ARCHAEOLOGICAL RESOURCES

No Action Alternative (GMPA 2000)

Based on prior archaeological discoveries at the Presidio and within the city and county of San Francisco, it is likely that additional significant subsurface prehistoric archaeological sites are present within the Presidio. The 218 years of military occupation has also resulted in the deposition of significant known historic archaeological resources as well as making the potential for additional site discoveries high.

There are three recorded prehistoric archaeological sites in the Presidio. There are numerous historic archaeological features, two of which -- *El Presidio de San Francisco* and the Crissy Field Quartermaster dump -- are undergoing extensive research and analysis by the Trust and NPS.

New construction on any part of the Presidio could adversely affect prehistoric and historic archaeological resources. The removal of structures, pavement, or vegetation on any part of the post would also have the potential to disturb archaeological resources. The restoration of riparian corridors, drainages, wetlands, and other water features, including El Polin Spring and Tennessee Hollow, could have a significant impact on archaeological resources, both prehistoric and historic. Most prehistoric sites in the San Francisco area have been discovered where aquatic-based foods were available and near freshwater streams or springs. In addition, ongoing repair and maintenance of buildings, structures, roads, and utilities near known archaeological sites or in archaeologically sensitive areas would increase the likelihood of resource disturbance.

Until preliminary designs are available for specific projects or planning districts, it would not be possible to accurately inventory and determine the effects of particular actions or groups of actions on archaeological resources.

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Direct effects would vary and be closely related to the nature and extent of specific ground disturbing actions. Direct effects on archaeological resources would be avoided to the extent possible through consultation between the project managers and the Trust's archaeological staff. If significant archaeological sites could not be avoided, a decision would be made to: abandon or redesign the proposed project to protect the archaeological site, proceed with the project under the terms of Stipulation XI Archaeology of the Programmatic Agreement (see Appendix D), or to consult with the State Historic Preservation Officer to develop mitigating measures, such as data recovery through archaeological excavation and recordation of sites. If previously unknown resources were discovered during construction subsequent to inventory efforts using best available technology, the Trust would comply with Programmatic Agreement Stipulation XII Discoveries.

The Main Post Planning District contains the site of *El Presidio de San Francisco*, the single most important archaeological site in the park. Restoration of the parade ground would be constructed in such a manner as to avoid impacts to the *El Presidio* site, and would conform to the recommendations adopted from the Archaeological Management Plan for this site. All other activities in proximity to the El Presidio quadrangle would be designed to minimize or avoid impacts to the site. The Tennessee Hollow riparian stream corridor restoration also has the potential for significant impacts to buried archaeological resources. The stream corridor has been characterized as archaeologically sensitive for sites of prehistoric occupation and U.S. Army eras (1861-1865, 1866-1890). No inventory has been conducted for the stream corridor restoration.

Building removal and site improvements to expand Crissy Marsh have high potential to impact significant prehistoric and historic archaeological sites. The remains of a single human of Native American ancestry were discovered near the Commissary in 1972. Discovery of a prehistoric site during the construction of the current Crissy Marsh required project redesign and a significant extensive historic site was also discovered and scientifically excavated to allow for the wetlands development.

The west area of the Letterman Planning District is an area of archaeological sensitivity for prehistoric archaeological sites and historic archaeological evidence of U.S. Army occupations from 1865-1890.

Any new construction at the Fort Scott Planning District might adversely affect historic archaeological sites or buried architectural features associated with historic coastal defense batteries dating to 1891-1914. This area is not considered very likely to contain evidence of prehistoric occupation.

The PSHH Planning District is archaeologically sensitive for the discovery of historic sites dating to 1866-1890, which covers the activities of the earliest Marine Hospital Merchant Marine Cemetery. Building demolition, new construction, infrastructure upgrades, vegetation management, and native plant restoration all have the potential to impact archaeological sites.

The East Housing Planning District is archaeological sensitive for both prehistoric and historic archaeological sites. Evidence of Native American and Spanish presence has been archaeologically documented in the vicinity of El Polin Spring. The Tennessee Hollow riparian stream corridor restoration also has the potential for significant impacts to buried archaeological resources. The stream corridor has been characterized as archaeologically sensitive for sites of prehistoric occupation and U.S. Army eras (1861-1865, 1866-1890). No inventory has been conducted for the stream corridor restoration.

Impacts on archaeological resources from the Wherry housing removal are considered unlikely assuming that the demolition activities take place within the footprint of the original construction. Archaeological sites can be buried by shifting dunes and other natural processes but potential impacts may be avoided through construction constraints. Several areas identified for vegetation management or enhancement have the potential to impact archaeological resources. An archaeological survey and subsurface testing, if necessary, would be completed prior to initiation of individual vegetation projects. Expansion of native plant habitat has a potential to impact prehistoric and historic archaeological sites. Vegetation projects would be redesigned in order to avoid impacts to significant archaeological resources.

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In conclusion, direct impacts on all archaeological sites cannot be analyzed at the present time because all sites have not been identified. Many of the actions required to make utilities and other infrastructure safe and/or in compliance with current standards, as well as emergency repairs, might affect unknown or known archaeological resources. New construction as well as repair and maintenance of existing buildings, roads, and other features would increase the likelihood of damage to sites. Measures contained in the Programmatic Agreement would help avoid or mitigate some of these adverse impacts on sites. In addition, this alternative includes measures to protect archaeological resources, including systematic inventories of Area B, subsurface investigations, permits requiring archaeological review prior to ground disturbance, and evaluation, recordation, cataloging, storage, and/or display of resources, as appropriate.

Final Plan Alternative

This alternative would have impacts similar to the No Action Alternative (GMPA 2000) in all planning districts except for East Housing. Within this planning district, replacement housing within the Tennessee Hollow riparian corridor would have the potential to impact a significant archaeological area. Mitigation measures would avoid or mitigate these potentially adverse impacts on sites.

Final Plan Variant

The Final Plan Variant would have impacts similar to the No Action Alternative (GMPA 2000) in all planning districts except for Crissy Field (Area B). Under the Final Plan Variant, removal of additional buildings (warehouses along Mason Street) would have the potential to impact a significant archaeological area. Mitigation measures would avoid or mitigate these potentially adverse impacts on sites.

Resource Consolidation Alternative

Removal of housing and landscaping in the South Hills Planning District as proposed under this alternative including Wherry Housing and East and West Washington housing areas has the potential to impact archaeological resources. Building demolition and landscape vegetation activities at the

PHSH could also impact archaeologically sensitive areas. In addition, when compared to the No Action Alternative (GMPA 2000), this alternative has a higher potential to impact known and unknown archaeological sites in the north due to the greater amount of demolition and infill construction in as yet unspecified locations. The extent of this cannot be assessed without more specific information to be provided during subsequent planning and environmental review. The impacts could range from minimal to significant for both prehistoric and historic sites. Mitigation measures identified in the Programmatic Agreement would avoid or mitigate these adverse impacts on sites.

Sustainable Community Alternative

This alternative, when compared to the No Action Alternative (GMPA 2000), has a higher potential to impact known and unknown archaeological sites due to the greater amount of new construction in as yet unspecified locations. The extent of this effect cannot be assessed without more specific information to be provided during subsequent planning and environmental review. The impacts could range from minimal to significant for both prehistoric and historic sites. Mitigation measures would avoid or mitigate these adverse impacts on sites.

Cultural Destination Alternative

Removal of housing and landscaping in the South Hills Planning District including Wherry Housing and the East and West Washington housing areas has the potential to affect archaeological resources. In addition, when compared to the No Action Alternative (GMPA 2000), this alternative has a higher potential to affect known and unknown archaeological sites in other planning districts due to the greater amount of new construction and demolition in as yet unspecified locations. The extent of this cannot be assessed without more specific information to be provided during subsequent planning and environmental review. The impacts could range from minimal to significant for both prehistoric and historic sites. Mitigation measures identified in the Programmatic Agreement would avoid or mitigate some of these adverse impacts on sites.

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Minimum Management Alternative

This alternative would have minimal impacts on known or unknown sites since there would be no major demolition or new construction. As there would be no restoration of the Main Post parade ground or the riparian corridor in Tennessee Hollow, potential impacts to archaeologically sensitive areas in the El Presidio quadrangle and Tennessee Hollow corridor, would be avoided. Crissy Marsh would not be expanded and therefore impacts to archaeologically sensitive areas would not also occur. There would be no unanticipated archaeological discoveries at the PSH because no construction or demolition is proposed. Since demolition of Wherry housing or revegetation in undisturbed areas would not occur, potential impacts from unanticipated archaeological discoveries would not occur.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

Applicable measures from the GMPA EIS have been incorporated into the Programmatic Agreement and apply to all alternatives.

New Mitigation Measures

The following measures are found in the Programmatic Agreement and apply to all alternatives.

CR-8 Archaeological Management Assessment and Monitoring Program. The treatment of archaeological properties would be handled in accordance with the terms of an Archaeological Management Assessment and Monitoring Program (AMA/MP) that is prepared for individual undertakings or groups of related undertakings. This program would ensure that all planned undertakings be reviewed by a qualified archaeologist prior to final design and/or approval. In addition to the AMA/MP, an archaeological research design would be prepared for any archaeological investigations that include testing for NR-eligibility, and test excavations or data recovery from prehistoric or historic sites that are known to be NR-eligible or are listed as contributors to the NHLD. The Trust's management of archaeological

properties would be reviewed annually in accordance with Stipulation XXI of the PA.

CR-9 Ground Disturbing Activities. Ground disturbing maintenance activities and construction projects would be closely observed in the vicinity of sensitive archaeological areas to discover, document, protect, and manage the archaeological record of the Presidio. During the planning process for such projects, an AMA/MP would be prepared to determine whether archival research, subsurface coring or trenching, and/or test excavations are required prior to ground disturbance. Archaeological monitoring is appropriate in areas of predicted archaeological sensitivity or for sampling purposes in areas that are not considered sensitive when the natural ground surface is obscured by paving or fill, or in other instances where a pedestrian survey or archaeological testing cannot reasonably be accomplished. Any required archaeological monitoring would be implemented in accordance with an AMA/MP, prepared by qualified personnel. If historic properties are discovered during implementation of an undertaking, a detailed report would be prepared. Large-scale ground disturbing activities would be monitored in accordance with an AMA/MP. Should circumstances arise where the Trust cannot address archaeological concerns in a manner consistent with the AMA/MP, the Trust would notify the SHPO.

CR-10 Archaeological Grid and Database. The Trust anticipates that previously unidentified subsurface historic properties could be encountered within the NHLD boundary due to the placement of fill over some of the historic marsh areas, historic landfill depositions, and other modifications to the land over 218 years of military occupation. The Trust would maintain an archaeological grid map and database of archaeological information for the Presidio, in cooperation with NPS. The map would also identify those areas where additional research and inventory are required during future project planning phases.

CR-11 Excavation Permits. The Trust would continue its policy of requiring all excavation permits to undergo archaeological review by qualified personnel, as defined in Stipulation III of the PA, prior to initiation of the requested activity. The excavation clearance process is included as Appendix B to the PA.

CR-12 Archaeological Management Plan for El Presidio. The Trust would prepare an Archaeological Management Plan (AMP) for the Spanish Colonial

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site known as “El Presidio de San Francisco.” The AMP would contain an inventory and evaluation of archival, architectural and archaeological features associated with this site; identify the likely presence of other significant features in the area; describe strategies for maintaining the site; contain standard operating procedures; establish programs to increase public awareness of this archaeological resource; recover data of archaeological significance; and provide for curation of archaeological collections and associated records. The AMP would be subject to peer review by NPS, SHPO, and if deemed necessary by the Trust, other qualified personnel.

CR-13 *Curation of Archaeological Collections.* All records associated with excavations and excavated materials not subject to NAGPRA that are deemed important for preservation would be accessioned, catalogued, and managed in accordance with 36 CFR Part 79, “Curation of Federally-Owned and Administered Collections.”

CR-14 *Discoveries.* If it appears that an undertaking would affect a previously unidentified property that could be eligible for inclusion in the

National Register, or could contribute to the NHLD, or affect a known historic property in an unanticipated manner, the Trust would stop any potentially harmful activities in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the property until it concludes consultation with the SHPO.

CR-15 *Treatment of Discoveries.* If the newly discovered property has not previously been included in or determined eligible for the NR and provisions for its treatment are not contained in an approved research design or AMA/MP, the Trust may assume that the property is eligible for purposes of the PA. The Trust would notify NPS and SHPO at the earliest possible time and consult to develop actions that shall take the effects of the undertaking into account. The Trust would notify the SHPO of any time constraints, and the Trust and the SHPO would mutually agree upon timeframes for this consultation but not to exceed 30 days. If treatment of the discovery is not included in an approved research design or AMA/MP, the Trust would develop written recommendations reflecting its consultation with NPS and SHPO and as necessary, would present a plan and schedule to implement these recommendations.

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4.3 NATURAL RESOURCES

This section evaluates potential impacts to biological, water, visual, air quality and noise resources. The evaluation methodology, impacts for each alternative, and mitigation measures to address potential impacts are discussed. Mitigation may be adapted from the GMPA EIS, or be new measures.

4.3.1 BIOLOGICAL RESOURCES

METHODOLOGY

To assess the potential for direct and indirect impacts on biological resources, the spatial extent of activities in each planning district was reviewed for each alternative in relationship to base maps of biological resources from the Affected Environment Chapter. The analysis considers a variety of factors in determining the relative significance of an impact, including the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973(ESA). The Trust also considered species and related habitat that are listed under the California Endangered Species Act and by the California Native Plant Society in this analysis. Special status species are evaluated under a separate subsection below. Other factors considered in determining the intensity of an impact include an alternative's potential to degrade habitat function and size, and/or interference with movement of any native resident or migratory fish or sensitive wildlife species.

For the purposes of the analysis, it was assumed that construction activities would be restricted to developed areas within each planning district (see Figures 3, 5, 6a, 7, 9, 11 and 13), and therefore would not directly displace existing natural habitat. The amount of proposed square footage (demolition and new construction) was used in determining the relative magnitude of the effect. Other factors include the intensity of overall land uses (i.e., total amount of built space, projected visitation) proposed under each alternative as well as consideration of special events, and general operations. Indirect impacts including potential increased disruption and abundance of invasive plant species and issues of adjacency are discussed.

A list of mitigation measures is provided at the end of the impact analysis. Measures adapted from the GMPA EIS are presented first, followed by new mitigation that was developed specifically in this EIS. Because this is a programmatic document, and future site-specific planning and environmental review would be completed, many of the mitigation measures are set up to provide standards, monitoring and other broad requirements that would be applied to future projects.

POTENTIAL IMPACTS

DIRECT AND INDIRECT EFFECTS ON NATIVE PLANT COMMUNITIES

All Alternatives

New construction generally requires clearing and grubbing of vegetation and the importation of fill materials where buildings, ornamental landscaping, paved streets or parking lots, and related facilities are to be located. These activities could result in a permanent loss and/or temporary disturbance of existing plants in the affected area, as well as adjacent areas resulting from increased human activity. Demolition activities, in particular staging and access, can similarly disturb on-site and adjacent vegetation. The creation and/or expansion of high intensity land uses and special events can also directly and indirectly affect native plant communities in various ways including elevated levels of visitor traffic, pets, and potential introduction of invasive non-native plants species. Infrastructure and operational requirements can also affect biological resources. All of these actions (demolition, construction, land use and general operations) can result in the direct or indirect loss or degradation of habitat function and size, potential fragmentation of habitat, reductions in numbers of individuals or loss of habitat to levels below those required to sustain any native plant population. Each alternative evaluated in this EIS proposes varying intensities of the activities described above. An alternative-by-alternative analysis is provided below.

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No Action Alternative (GMPA 2000)

This alternative would increase the area of existing open space in Area B from about 695 acres to about 794 acres, and would expand the acreage of native plant habitat in Area B from about 70 acres to about 210 acres. The increase in native habitat would be a beneficial effect of this alternative. The VMP would guide all protection, restoration, and enhancement of vegetation resources. Restoration of the ecological processes within the three tributaries of Tennessee Hollow would improve the creek and associated riparian corridor. The restored creek and riparian corridor would connect to an expanded tidal marsh at Crissy Field. Serpentine grasslands at Inspiration Point and a contiguous functioning dune system in the western section of the Presidio would be restored. Ecological restoration and protection activities would continue in the Lobos Creek Dunes, North Baker Beach, the PSH Planning District, Rob Hill, the serpentine bluffs, Mountain Lake, Inspiration Point and many wetlands. As a result of these efforts, this alternative would increase important habitat for plant and wildlife on the Presidio. The No Action Alternative (GMPA 2000) also identifies other corridors and sites proposed for restoration. Many of these areas are adjacent to existing native plant communities, where increased habitat could enhance rare or endangered plants and unique wildlife (see Figure 17, Natural Resources, Affected Environment Chapter).

The No Action Alternative (GMPA 2000) would result in approximately 1.12 million square feet (sf) of demolition and up to 170,000 sf of new construction. The demolition and new construction could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment Chapter, if grading, staging, construction and/or landscaping were to occur in an area containing native plant communities or assemblage. Demolition or construction adjacent to these areas could also create indirect impacts including those caused by inadvertent trampling from vehicles or workers seeking convenient access or staging/storage space, pollution from spills or upsets, the introduction of incompatible soils and fill materials, and/or the inadvertent introduction of invasive non-native plant species. GMPA EIS mitigation measures would be applied to protect native habitat communities from the direct and indirect effects of demolition and new construction. These measures include preparation and implementation of site-

specific native revegetation plans and using local native plants to be propagated in a Presidio-based native plant nursery. It should be noted that the majority of the demolition activities proposed under the No Action Alternative (GMPA 2000) would be necessary to implement restoration activities, and to provide an increase in open space.

Specific measures to minimize direct and indirect effects on natural plant communities are presented at the end of this section and include the use of buffers between sensitive resources and intensive activities. Where buffers are not feasible, fencing or other barriers would be erected. Best management practices for activities within and adjacent to native habitats would be developed and applied. The importation and use of incompatible soil material for ecological restoration efforts, and the inadvertent importation of invasive exotic seeds and plant materials in erosion control and soil materials used in construction and demolition projects would be prohibited. The alteration of local surface and groundwater hydrology that could affect the available water necessary for maintaining the richness and presence of localized plant communities and assemblages would also be prohibited. Construction, demolition and special events in proximity to sensitive natural areas would have an approved invasive non-native plant control program. In addition, a program to ensure that the protection, monitoring and restoration of Presidio ecosystems, including the critical control of invasive non-native plant species, are accomplished over the long-term would be in place. Taken together, these measures would protect native plant communities and/or assemblages from direct and indirect impacts.

Existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase. These activities could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. Measures to ensure that native plant communities would be protected from these disturbances, including setbacks and/or barriers to protect native plant communities, would be required. High intensity land uses (including active recreational activities or special events) adjacent to native plant communities and/or assemblages could result in indirect impacts, such as trampling from increased recreational use or informal access by people and their pets.

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Disturbed areas would be immediately revegetated with native species to reduce the potential of colonization by invasive non-native species. Timely restoration of these areas would also discourage intrusion into native communities from adjacent activity areas. Visitor access would be guided by the Presidio Trails and Bikeways Master Plan, as well as the best management practices and related monitoring activities required as mitigation in this EIS. Under this alternative, activities such as infrastructure development, building rehabilitation and increased land use activities in developed areas could also result in adverse impacts to remnant special-status species, wetland vegetation and native plant assemblages occurring outside of the VMP native plant community zone. Losses to other biological resources in developed areas, including the San Francisco owl's clover population north of the Log Cabin, and the remnant wetland vegetation communities in the Fort Scott, South Hills and Main Post Planning Districts, would occur if development was sited in areas supporting these vegetation communities and/or assemblages. Best management practices would be implemented within and adjacent to these areas, and other outlier native plant and vestige wetland resources, to protect them and their associated habitats. These best management practices would be developed such that the management of these resources would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these BMPs and other requirements listed in this EIS, would be implemented to prevent such effects.

In conclusion, the No Action Alternative (GMPA 2000) would provide an overall increase in the existing open space and native plant communities and would provide for the restoration of several natural areas and ecological corridors (i.e., Tennessee Hollow, expansion of Crissy Field Marsh, and restoration of serpentine grasslands at Inspiration Point). Demolition activities would be slightly higher than the Final Plan and Sustainable Alternatives, but new construction would be substantially lower than any of the action alternatives (with the exception of Minimum Management). Direct and indirect impacts to native plant communities associated with demolition and construction would be minimized and/or eliminated through implementation of the mitigation measures identified in this section. Overall, this alternative would have a beneficial effect on native plant communities and restoration, and would provide a substantial increase in the amount of

existing open space. Impacts associated with proposed demolition, new construction, and other disturbances can be minimized through implementation of the required mitigation.

Final Plan Alternative

Under the Final Plan Alternative, existing open space would be increased from 695 to 794 acres, similar to the No Action Alternative (GMPA 2000). This alternative would similarly result in an increase in the total amount of existing native plant communities (from 70 to 212 acres), slightly more than the 210 acres proposed under the No Action Alternative (GMPA 2000). As with the No Action Alternative (GMPA 2000), the VMP would guide all protection, restoration, and enhancement of vegetation resources, including the restoration of the three tributaries and riparian corridor of Tennessee Hollow, which would be restored and connected to the marsh at Crissy Field. Although the amount of open space would be about the same as the No Action Alternative (GMPA 2000), the potential for disturbance or loss of native plant and wildlife habitat would be higher because the Final Plan Alternative proposes somewhat greater development (i.e., replacement construction).

The Final Plan Alternative would result in approximately 1.07 million sf of demolition and up to 710,000 sf of new (replacement construction). The demolition and new (replacement) construction could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment Chapter, if grading, staging, construction and/or landscaping were to occur in an area containing native plant communities or assemblages or where restoration is proposed. In comparison to the No Action Alternative (GMPA 2000), this represents roughly 50,000 sf less demolition and 540,000 sf more construction. Although there is a difference in the total square footage, the analysis of demolition and construction impacts (and corresponding mitigation) provided above for the No Action Alternative (GMPA 2000) would apply to this alternative. The impact on biological resources within the developed areas, as described above for the No Action Alternative (GMPA 2000), would also be the same for the Final Plan Alternative. Because this EIS tiers from the 1994 GMPA EIS and focuses on the incremental changes that would occur between the GMPA and each PTMP alternative, the analysis below is accordingly focused on the substantive

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(biological) differences between the No Action (GMPA 2000) and the Final Plan Alternatives.

Under the Final Plan Alternative, approximately 4 acres of developed area within the western West Washington Housing area would be converted to open space. This additional open space would reduce potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressure) on adjacent native plant communities, and result in the restoration of central dune scrub and potentially oak woodland habitat. This habitat would be contiguous with habitat currently proposed for future San Francisco lessingia recovery, and could support the establishment of lessingia and other rare dune annual species. However, at the Nike Missile Site (above the Nike swale) approximately 2 acres of currently paved and disturbed area would be designated for institutional/residential use. This area is proposed for native plant habitat restoration under the No Action Alternative (GMPA 2000). The precise effect of the change in land use would depend on the site-specific changes proposed. The area to the south supports potential jurisdictional wetlands and populations of the federally-endangered San Francisco lessingia, and to the north recently restored dune scrub habitat. Possible secondary effects from future use of this site could include potential changes in hydrology of the wetland, and conversion of adjacent early successional native vegetation to more shrubby vegetation assemblages. Future uses would, however, be subject to the mitigation measures presented in this EIS, as well as site-specific planning and environmental review. The mitigation measures identified in this EIS require use of buffer areas to protect sensitive species, restrictions on the use of non-native invasive plant species, and implementation of best management practices. Any proposed construction and operations in this area would also be designed or otherwise conditioned to minimize changes in the local hydrology such that the surrounding native vegetation including adjacent lessingia habitat would not be adversely affected.

Under the Final Plan Alternative, the Trust commits to the long-term ecological viability of Crissy Marsh. The Trust, in partnership with the NPS and Golden Gate National Parks Association, has initiated the Crissy Field Marsh Expansion Technical Study (Marsh Study) to consider a broad array of options to achieve this.

Under the Final Plan Alternative, there would be an increase in the number of projected Presidio residents, visitors and employees and total built space when compared to the No Action Alternative (GMPA 2000). This overall increase in use of the park by the public could indirectly affect the health of native plant communities, specifically the viability of sensitive habitats within in the PSH Planning District. This could result in the increased potential for fragmentation, loss of natural processes or disturbance to native plant communities, and have reduced ecological benefits compared to those defined under the No Action Alternative (GMPA 2000). In addition, similar to the No Action Alternative (GMPA 2000), existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. Best management practices would be implemented within and adjacent to areas supporting outlier native plant and vestige wetland resources outside of the native plant communities zone (including the San Francisco owl's clover population north of the Log Cabin, and the remnant wetland vegetation communities in the Fort Scott, South Hills and Main Post Planning Districts), to protect them and their associated habitats. These BMPs would be developed such that the management of these resources would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these BMPs and other requirements listed in this EIS, would be implemented to prevent such effects.

In conclusion, the Final Plan Alternative would have a similar beneficial effect on expansion of existing open space and native plant communities by providing roughly the same and 2 areas more, respectively, than the No Action Alternative (GMPA 2000). Although disturbances from demolition would be substantially less under the Final Plan Alternative, the projected land use levels and total amount of new (replacement) construction would be greater. Mitigation would be required to reduce potential adverse impacts on native plant communities, and future site-specific planning and environmental review would also be completed.

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Final Plan Variant

Under the Final Plan Variant, existing open space would be increased from 695 to 819 acres, which represents an increase (25 acres) in open space over the No Action Alternative (GMPA 2000). This alternative would also result in an increase in the total amount of existing native plant communities (from 70 to 215 acres) over the 210 acres proposed under the No Action Alternative (GMPA 2000). As with the No Action Alternative (GMPA 2000), the VMP would guide all protection, restoration, and enhancement of vegetation resources, including the restoration of the three tributaries and expanded riparian corridor of Tennessee Hollow, which would be restored and connected to an expanded marsh at Crissy Field.

The Final Plan Variant proposes roughly 1.25 million sf of demolition, and no new (replacement) construction. The demolition could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment chapter, if grading, staging, operations and/or landscaping were to occur in an area containing native plant communities or assemblages. In comparison to the No Action Alternative (GMPA 2000), this represents roughly 130,000 sf more demolition, and 170,000 sf less new construction. Therefore, cumulatively this alternative could have a similar potential to disturb native plant communities as the No Action Alternative (GMPA 2000). The measures identified above for the No Action Alternative (GMPA 2000) would apply to this alternative and would minimize the potential loss or degradation of existing native plant communities from direct and indirect/adjacent activities and disturbances. The impact on biological resources within the developed areas, as described above for the No Action Alternative (GMPA 2000), would also be the similar for the Final Plan Variant, with exceptions listed below. The following analysis is focused on the substantive (biological) differences between the No Action Alternative (GMPA 2000) and the Final Plan Variant.

Under the Final Plan Variant, an additional one-acre of native plant habitat would be restored north of Battery Sherwood, at the base of the western Crissy Field bluffs. This could provide the potential of increasing the remnant coastal scrub and fresh water seep vegetation communities within this area. Additionally, the width of the lower Tennessee Hollow corridor (directly

south of Doyle Drive) would be increased by approximately 3 acres. Additionally, four Gorgas warehouses would be demolished to further increase potential habitat (about 2 acres) for an expanded Crissy Field marsh. These areas are proposed for mixed-use/office/residential and mixed-use/visitor: cultural focus respectively under the No Action Alternative (GMPA 2000). The precise effect would depend on the type and extent of vegetation treatment proposed, as the areas are designated under the VMP as landscape vegetation, which would not preclude future site-specific native plant restoration. Increasing this open space could reduce potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressures) by ensuring at least a 150-foot riparian corridor buffer throughout approximately 80 percent of the corridor.

Approximately 5 acres of additional open space would be created directly west of the Log Cabin and north of Fort Scott. This could decrease urban edge effect pressures on remnant fresh water wetland habitat and could provide opportunities for expanding both wetland and serpentine grassland habitat if consistent with future site-specific vegetation objectives.

Under the Final Plan Variant, there would be an increase in the number of projected Presidio residents, visitors and employees when compared to the No Action Alternative (GMPA 2000). This overall increase in use of the park by the public that could indirectly affect the health of native plant communities, specifically the viability of sensitive habitats within the PSH Planning District. However, the increase in the overall amount of open space that would be achieved under this alternative would reduce some of the edge pressures on the native plant communities commonly associated with built environments. These would include the spread of invasive exotic species, increased visitor and tenant use, and increased disturbance from infrastructure. Measures to ensure that native plant communities would be protected from all disturbances, including setbacks and/or barriers to protect native plant communities, would be required. Similar to the No Action Alternative (GMPA 2000), existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant

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communities zone. Best management practices would be implemented within and adjacent to areas supporting outlier native plant and vestige wetland resources outside of the native plant communities zone (including the San Francisco owl's clover population north of the Log Cabin, and the remnant wetland vegetation communities in the Fort Scott, South Hills and Main Post Planning Districts), to protect them and their associated habitats. These BMPs would be developed such that the management of these resources would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these BMPs and other requirements listed in this EIS, would be implemented to prevent such effects.

In conclusion, the Final Plan Variant would have a similar beneficial effect on expansion of existing open space and native plant communities [by providing roughly 25 and 5 acres more, respectively, than the No Action Alternative (GMPA 2000)]. Although disturbances from demolition would be substantially greater under the Final Plan Variant, the elimination of all new construction activities could cumulatively result in similar potential affects as those determined in the No Action Alternative (GMPA 2000). Consistent with the No Action Alternative (GMPA 2000), mitigation would be required to reduce potential adverse impacts on native plant communities, and future site-specific planning and environmental review would also be completed.

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, existing open space would increase from 695 to 838 acres, which represents a 44-acre increase over the No Action Alternative (GMPA 2000). This alternative would increase the total amount of existing native plant communities (from 70 to 213 acres), a slight increase over the 210 acres proposed under the No Action Alternative (GMPA 2000). As with the No Action Alternative (GMPA 2000), the VMP would guide all protection, restoration, and enhancement of vegetation resources, including the restoration of the three tributaries and riparian corridor of Tennessee Hollow, which would be restored and connected to the expanded marsh at Crissy Field.

The Resource Consolidation Alternative proposes roughly 1.91 million sf of demolition, and up to 1.25 million sf of new (replacement) construction. The

demolition and new (replacement) construction could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment chapter, if grading, staging, construction and/or landscaping were to occur in an area containing native plant communities or assemblages or where restoration is proposed. In comparison to the No Action Alternative (GMPA 2000), this represents roughly 790,000 sf more demolition and over 1 million sf more new construction. Therefore, this alternative could have a greater potential to disturb native plant communities than the No Action Alternative (GMPA 2000). Measures identified above for the No Action Alternative (GMPA 2000) would apply to this alternative and would minimize the potential loss or degradation of existing native plant communities from direct and indirect/adjacent activities and disturbances.

Under the Resource Consolidation Alternative, approximately 1 acre of land in Tennessee Hollow proposed for native plant restoration under the No Action Alternative (GMPA 2000) would be designated for residential use. Residential use of this land could interfere with a planned buffer and habitat link with adjacent areas. As required by the mitigation measures presented in this EIS, timely restoration of appropriate native buffer vegetation adjacent to this area would help reduce the indirect effects associated with this land use. In addition, future site-specific planning and environmental review would be completed. The conversion of some developed areas (roughly 11 acres) within the central Tennessee Hollow corridor into open space could also potentially enhance creek, riparian and upland vegetation restoration efforts. In addition, other developed areas within the East and West Washington Housing area (approximately 27 acres) would also be converted to open space, reducing potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressure) on adjacent native plant communities. The precise effects of the above actions would depend on the type and extent of vegetation treatment proposed, as these areas are designated under the VMP as landscape vegetation, which would not preclude future site-specific native plant restoration.

Under the Resource Consolidation Alternative, there would be a higher number of projected Presidio residents, visitors and employees. However, this alternative provides the greatest consolidation of intensive land use within the northern and eastern planning districts of the Presidio, resulting in a

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contiguous open space corridor in the southern planning districts. Overall this would result in less potential for fragmentation or disturbance to native plant communities and have higher ecological benefits than the No Action Alternative (GMPA 2000). Existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. However, the increase in the overall amount of open space that would be achieved under this alternative would reduce some of the edge pressures on the native plant communities commonly associated with built environments. These would include the spread of invasive exotic species, increased visitor and tenant use, and increased disturbance from infrastructure. Measures to ensure that native plant communities would be protected from all disturbances, including setbacks and/or barriers to protect native plant communities, would be required.

In conclusion, the Resource Consolidation Alternative would have an increased beneficial effect on expansion of existing open space and planned restoration of native plant communities (by providing roughly 44 and 3 acres more, respectively), compared to the No Action Alternative (GMPA 2000). Demolition and new (replacement) construction activities would be substantially higher than the No Action Alternative (GMPA 2000). Overall, the Resource Consolidation Alternative would have greater potential for direct effects on native plant communities during future construction.

Implementation of the mitigation measures identified in this EIS would minimize these impacts, and future site-specific planning and environmental review would be required. Additionally, there would be a substantial increase in the amount of open space provided under this alternative, which would have a greater beneficial indirect impact than the No Action Alternative (GMPA 2000), by reducing edge effect and localized land use pressures from the developed environment on native plant communities.

Sustainable Community Alternative

Under the Sustainable Community Alternative, existing open space would increase from 695 to 772 acres, which represents a 22-acre reduction when

compared to the No Action Alternative (GMPA 2000). This alternative would result in an increase in the total amount of native plant communities (from 70 to 209 acres), but would be slightly less than the 210 acres proposed under the No Action Alternative (GMPA 2000).

The Sustainable Community Alternative would result in approximately 890,000 sf of demolition and up to 620,000 sf of new (replacement) construction. The demolition and new (replacement) construction could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment Chapter, if grading, staging, construction and/or landscaping were to occur in an area containing native plant communities or assemblages or where restoration is proposed. When compared to the No Action Alternative (GMPA 2000), this represents a reduction of approximately 230,000 sf in demolition and an increase of roughly 450,000 sf in new construction. Although the reduction in total demolition would lessen potential short-term impacts, it would also reduce the amount land available for open space and restoration activities. The increase in new (replacement) construction would create a greater potential to disturb native plant communities than the No Action Alternative (GMPA 2000). Measures identified above for the No Action Alternative (GMPA 2000) would apply to this alternative and would minimize the potential loss or degradation of existing native plant communities from direct and indirect/adjacent activities and disturbances.

Under the Sustainable Community Alternative, approximately 1 acre of land in Tennessee Hollow proposed for native plant restoration under the No Action Alternative (GMPA 2000) would be designated for residential use. Residential use of this land would interfere with a planned buffer and habitat link with adjacent areas. As required by the mitigation measures presented in this EIS, timely restoration of appropriate native buffer vegetation adjacent to this area would help reduce the indirect effects associated with this land use. In addition, future site-specific planning and environmental review would be completed.

The Trust, in partnership with the NPS and Golden Gate National Parks Association, has initiated the Crissy Field Marsh Expansion Study (Marsh Study), please refer to the discussion under the Final Plan Alternative.

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The projected residents, visitors and employees and built space (i.e., land uses) would be greater than the No Action Alternative (GMPA 2000). This increased activity could indirectly affect the health of native plant communities, specifically the viability of the native plant communities in and adjacent to the PSH, East Housing and Crissy Field Planning Districts. Indirect impacts could include the increased potential for fragmentation and loss of natural processes or disturbance to native plant communities. This alternative would have less ecological benefit than the No Action Alternative (GMPA 2000). Existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. Measures to ensure that native plant communities would be protected from all disturbances, including setbacks and/or barriers to protect native plant communities, would be required.

In conclusion, the Sustainable Community Alternative would have a decreased beneficial effect on native plant communities [by providing approximately 1 acre less, as well as a 22-acre reduction in open space than the No Action Alternative (GMPA 2000)]. Demolition activities would be slightly lower than the No Action Alternative (GMPA 2000), but new (replacement) construction and projected land use levels would be substantially greater under the Sustainable Community Alternative. Implementation of the mitigation measures identified in this EIS would minimize these impacts and future site-specific planning, and environmental review would also be completed.

Cultural Destination Alternative

Under the Cultural Destination Alternative, existing open space would increase from 695 to 807 acres, which is 13 acres more than would be realized under the No Action Alternative (GMPA 2000). This alternative would result in an increase in the total amount of existing native plant communities (from 70 to 207 acres), which represents a 3 acre reduction from the No Action Alternative (GMPA 2000). While the amount of open space would increase under this alternative, the potential for disturbance or loss of native plant and

wildlife habitat would be higher than the No Action Alternative (GMPA 2000), because it allows for substantially greater development.

The Cultural Destination Alternative would result in approximately 1.37 million sf of demolition and 1.37 million sf of new (replacement) construction. The demolition and new (replacement) construction could adversely affect native plant communities shown in Figure 18, Natural Resources, Affected Environment Chapter, if grading, staging, construction and/or landscaping were to occur in an area containing native plant communities or assemblages or where restoration is proposed. When compared to the No Action Alternative (GMPA 2000), this represents an overall increase in demolition and construction (250,000 sf and 1.2 million sf, respectively). This alternative proposes the greatest amount of new (replacement) construction of all alternatives.

Under the Cultural Destination Alternative, conversion of developed areas (approximately 4 acres) within the western West Washington Housing area to open space would reduce potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressure) on adjacent native plant communities, and result in the restoration of central dune scrub and potentially oak woodland habitat. This habitat would be contiguous with habitat currently proposed for future *San Francisco lessingia* recovery, and could support the establishment of *lessingia* and other rare dune annual species. Additionally, the PSHI parking area and Nike Missile Site (above the Nike swale) would be designated for landscape vegetation and institutional/residential uses, respectively. This area is proposed for native plant habitat restoration under the No Action Alternative (GMPA 2000). The surrounding area contains potential jurisdictional wetlands and populations of the federally-endangered *San Francisco lessingia*, and the area as a whole is included within the planned restoration effort for enhancing the natural values of the larger ecological corridor. The precise effect of these land uses would depend on the type and extent of projects proposed within each of these areas. For a discussion of possible impacts and applicable mitigation measures, refer to Final Plan Alternative analysis, above.

Under the Cultural Destination Alternative, approximately 1 acre of land in Tennessee Hollow proposed for native plant restoration under the No Action

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Alternative (GMPA 2000) would be designated for residential uses. Residential use of this land would interfere with a planned buffer and habitat link with adjacent areas. As required by the mitigation measures presented in this EIS, timely restoration of appropriate native buffer vegetation adjacent to this area would help reduce the indirect effects of this land use. In addition, future site-specific planning and environmental review would further consider the precise use of this area and potential mitigation.

The Trust, in partnership with the NPS and Golden Gate National Parks Association, has initiated the Crissy Field Marsh Expansion Study (Marsh Study), please refer to the discussion under the Final Plan Alternative.

Under the Cultural Destination Alternative, there would be a higher number of projected Presidio residents, visitors and employees and more built space. Overall this alternative would result in a more intensive use of the Presidio by the public, which could indirectly affect the health of native plant communities, specifically the viability of sensitive habitats within the PSH, East Housing and Crissy Field Planning Districts. This could result in the increased potential for fragmentation, loss of natural processes or disturbance to native plant communities, and have reduced ecological benefits compared to those defined under the No Action Alternative (GMPA 2000). Existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. Measures to ensure that native plant communities would be protected from all disturbances, including setbacks and/or barriers to protect native plant communities, would be required.

In conclusion, the Cultural Destination Alternative would have an increased beneficial effect on expansion of existing open space and a decreased beneficial effect on native plant communities [by providing roughly 13 acres more and 3 acres less, respectively, than the No Action Alternative (GMPA 2000)] as well as a reduction in the benefits associated with planned restoration. Demolition and new (replacement) construction activities and overall land use levels would be greater than both the No Action (GMPA

2000) and Final Plan Alternatives. Implementation of the mitigation measures identified in this EIS would minimize these impacts, and future site-specific planning and environmental review would also be completed.

Minimum Management Alternative

Under this alternative, existing open space areas would be increased only slightly (from 695 to 702 acres), a substantial reduction from the 794 acres proposed under the No Action Alternative (GMPA 2000). No native plant community restoration would occur under this alternative (existing communities represent approximately 70 acres). In comparison to the restoration proposed under the No Action Alternative (GMPA 2000) (210 acres), this would be a substantial reduction. Only those actions necessary to meet legislative requirements would be carried out. Management programs would be restricted to those that are already being conducted. Many of the provisions identified in the GMPA or the PTMP would not be implemented. Ecological restoration efforts that are currently underway would continue but would not expand into new areas as identified in the VMP. Major projects that would be undertaken to expand or improve open space would be limited to Mountain Lake Enhancement Plan actions and landscape improvements at the LDAC site. Native plant communities would continue to occupy 70 acres of Area B. No restoration would occur in 140 acres of native plant communities. Wherry housing would not be removed for restoration of native plant habitat. The Minimum Management Alternative would preclude opportunities to implement recovery actions for 3 federally threatened or endangered plant species (Presidio clarkia, Marin dwarf flax, and Raven's manzanita). It would also preclude active habitat restoration efforts to recover a fourth federally threatened and endangered species, the San Francisco lessingia. This would have an adverse impact on the viability of special-status species and associated remnant plant communities.

Any expansion that would be required to ensure the health of the Crissy Field marsh would not occur in Area B. Therefore, if the marsh closes for a period of time, altering the marsh environment's salinity and water inundation footprint and frequency the tidal marsh vegetation communities could be lost, and the re-introduction efforts for the federally endangered California sea-blite may be affected. If the Crissy Field wetland continues to close for

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significant periods of time the tidal marsh vegetation communities would be adversely affected.

No demolition or new construction would occur under the Minimum Management Alternative, so there would be little potential for the loss of existing native plant communities as a result of these activities. However, existing buildings would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, recreational facilities, and visitor access would continue to increase, which could affect native plant communities and/or assemblages, and associated special-status species located within and outside of the native plant communities zone. Measures to ensure that native plant communities would be protected from all disturbances, including setbacks and/or barriers to protect native plant communities, would be required.

In conclusion, the Minimum Management Alternative would have a substantial reduction in the beneficial effect on both existing open space and native plant communities [by providing roughly 92 acres less and 140 acres less, respectively, than the No Action Alternative (GMPA 2000)]. In particular, the failure to implement the native plant communities restoration objectives (as defined in the VMP) in existing “disturbed” habitat would have a significant reduction in the restoration benefits of the No Action Alternative (GMPA 2000), and in some cases create adverse biological effects. The projected land use levels would also be greater under the Minimum Management Alternative, and could result in increased impacts to the viability of the native plant communities in and adjacent to all existing habitat restoration areas. Overall, the Minimum Management Alternative would have the greatest direct effect on native plant communities.

DIRECT AND INDIRECT EFFECTS ON WILDLIFE

All Alternatives

The demolition, construction and/or operations associated with all alternatives could create a direct and indirect loss or degradation of native wildlife habitat (native plant communities and high-value wildlife habitat in landscaped areas and non-native forests) based on human activities including noise, pets, visual intrusion of humans, lighting. The more developed areas become, the less

valuable they tend to be as wildlife habitat. New development could increase human presence and increase the potential for soil, wildlife and vegetation disturbance. The potential for human-wildlife interactions and human-induced impacts (such as the introduction of unnatural food sources) would also increase. The potential for an increase in depositing unwanted pets into parklands and also feeding pets outdoors could also occur, resulting in increased predation on wildlife from feral cats. The effects of human food on the behavior, distribution, and abundance of wildlife species would continue in existing developments, and could begin in new developments unless facilities, education enforcement, and appropriate garbage management areas are provided.

The removal of development from an area would increase the value of the habitat.

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would result in new development and the operation of new land uses (including intensive recreational and special event activities). Depending on where these activities are located, they could result in significant losses or degradation of existing native wildlife habitat or high value wildlife habitat in non-native forests or landscaped areas. Wildlife could be disturbed by people walking, running or exercising pets, by vehicles, by noise, and by increased lighting. However, under this alternative, native wildlife species and their habitats would be identified, protected, monitored and, where possible, restored. Forest areas would be managed to provide for wildlife habitat values, especially where important native habitat occurs adjacent, within and underneath the historic forest canopy. Sensitive habitat areas would be protected during forest rehabilitation.

Activities associated with demolition or construction in areas adjacent to valuable wildlife habitat could degrade adjacent habitat through the visual and noise intrusion associated with human activity, the inadvertent trampling by vehicles or workers seeking convenient access or staging/storage space, and pollution, including potential spills or upsets. The rehabilitation and/or conversion of historic structures and demolition of non-historic structures could result in the modification and/or loss of potential habitat for the federally-protected *Yuman myotis* and other species of bats.

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Mitigation identified in this EIS would require site-specific surveys at the time a particular activity is proposed. Information obtained during the survey would be used to design and implement protective measures (see mitigation section for additional detail). High intensity land uses (including recreational activities) adjacent to open space could result in indirect impacts to native animals and wildlife habitat through visual and noise impacts from human activities as well as trampling damage from human and pet access and predation by domestic and feral cats and dogs. Buffers and/or barriers between sensitive wildlife habitat and human activity would be provided as required by the mitigation measures presented in this EIS. New development and high intensity recreation and land use activities would be avoided within forest areas that support high, sensitive, unique and/or documented wildlife values. Best management practices for activities within and adjacent to sensitive wildlife habitats and corridors would be developed and applied. Long-term monitoring would occur to ensure protection of wildlife species. Feeding of animals outside would be prohibited, and garbage management would be initiated to reduce the influences of human food on wildlife. In addition, measures to protect wildlife from the effects of artificial light would be required.

In conclusion, the demolition, construction and new land uses proposed under the No Action Alternative (GMPA 2000) could result in potential habitat degradation and wildlife disturbance. Through the mitigation measures required in this EIS and future site-specific planning and environmental review, the effect of these activities and subsequent impacts would be minimized. Overall, the habitat restoration efforts and expansion of open space areas proposed under the No Action Alternative (GMPA 2000) would offset potential impacts, and provide a long-term beneficial effect on wildlife resources.

Final Plan Alternative

The Final Plan Alternative would have similar wildlife impacts as described above for the No Action Alternative (GMPA 2000), including potentially significant loss or degradation of existing native wildlife habitat or high value wildlife habitat in non-native forests or landscaped areas. These impacts would be a direct result of proposed demolition, new (replacement)

construction and increased visitor uses. Although the Final Plan Alternative proposes less demolition, there would be an overall increase in new construction and use levels; therefore, there would be a higher potential for wildlife impacts. As described for the No Action Alternative (GMPA 2000), these proposed activities would be subject to a series of protective measures (mitigation) and the corresponding impact on wildlife would be minimized and/or eliminated.

One of the primary distinctions between the No Action (GMPA 2000) and Final Plan Alternative's effect on wildlife results from the proposed institutional/residential use of the Nike Missile site, rather than native plant restoration as proposed under the No Action Alternative (GMPA 2000). The area surrounding this feature provides nesting habitat for California quail and other wildlife. The region as a whole is included within a current restoration planning effort to establish a functioning dune and wildlife corridor. The precise effect of the institutional/residential uses would depend on the type and extent of the land use proposed within the area. Impacts on wildlife could occur either indirectly based on increased use levels. Please refer to the analysis of native plant communities above for a discussion of potential habitat changes and corresponding mitigation measures. With regard to use levels, the Trust would implement mitigation measures, such as use of buffer areas/set-back restrictions, monitoring and best management practices, to reduce wildlife impacts.

As previously described in the discussion of native plant communities effects, a Crissy Field Marsh Expansion Technical Study has been initiated to ensure the long-term ecological viability of the marsh which would beneficially affect wildlife that rely on the marsh and its environs as habitat.

Implementation of measures identified in this EIS would avoid other direct impacts on wildlife habitat, and would partially avoid indirect affects of adjacent uses. Future site-specific planning would provide for buffer zones and/or barriers between human activity and wildlife habitat in the Presidio forest, and would provide protection from disturbing and/or impacting forestry practices and other noise and light sources, and protection of natural habitat for wildlife species.

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In conclusion, the Final Plan Alternative would have similar habitat restoration benefits that would be realized under the No Action Alternative (GMPA 2000), and subsequently on wildlife habitat and movement. The direct impacts associated with proposed demolition, construction and use levels would be minimized through implementation of mitigation measures identified in this EIS, and future site-specific planning and environmental review would also be completed.

Final Plan Variant

Under the Final Plan Variant, the potential for direct and indirect impacts on native and other high value wildlife habitats would be similar to that of the No Action Alternative (GMPA 2000). Although there would be substantially more demolition, there would no new construction under this alternative. The mitigation measures presented in this EIS would minimize the impact of these activities. In addition, existing space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase. Implementation of measures identified in this EIS would avoid other direct impacts on wildlife habitat, and would partially avoid indirect affects of adjacent uses. Future site-specific planning would provide for buffer zones and/or barriers between human activity and wildlife habitat in the Presidio forest, and would provide protection from disturbing and/or impacting forestry practices and other noise and light sources, and protection of natural habitat for wildlife species.

Overall, the increase in the amount of open space resulting from this alternative would reduce some of the edge effect pressures, reduce habitat fragmentation in the lower Tennessee Hollow riparian corridor, western Crissy Field bluffs and northern Fort Scott sections of the Presidio, providing buffered wildlife corridors, and reducing some of the urban pressures such as noise, light and increased visitor and operational activities.

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, the potential for direct and indirect impacts on native and other high value wildlife habitats would be similar to that of the No Action Alternative (GMPA 2000). Although there would be substantially more construction and demolition under this

alternative, the mitigation measures presented in this EIS would minimize the impact of these activities. In addition, existing space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase.

Overall, the increase in the amount of open space resulting from this alternative would reduce some of the edge effect pressures, reduce much of the habitat fragmentation in the south western sections of the Presidio, provide a contiguous wildlife corridor, and reduce some of the urban pressures such as noise, light and increased visitor and operational activities.

Sustainable Community Alternative

Direct and indirect impacts on native and other high value wildlife habitats resulting from this alternative would be similar to but slightly less than the No Action Alternative (GMPA 2000). Demolition activities would be slightly lower than the No Action Alternative (GMPA 2000), but substantially higher for new (replacement) construction. The projected use levels would also be greater under the Sustainable Community Alternative, and could result in increased impacts on wildlife, specifically in and adjacent to the East Housing and Crissy Field Planning Districts. Impacts could include the increased potential for habitat fragmentation, increased use levels, changed spatial configuration of restored wildlife habitat necessary for movement, and potential natural resource conflicts in specific areas. The site-specific impacts on wildlife, and protective mitigation measures under this alternative would also be similar to those described in the Final Plan Alternative. Implementation of these measures would minimize these impacts.

Cultural Destination Alternative

Under the Cultural Destination Alternative, the potential for impacts would be similar to that of the Final Plan Alternative but more intense as this alternative proposes the greatest amount of new (replacement) construction, and second greatest amount of demolition, and projected use levels. In addition, existing space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase. The site-specific impacts on wildlife, and protective mitigation measures under this alternative would also be similar to those described in the Final Plan Alternative. As with all of the alternatives, wildlife could be

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disturbed by demolition, construction, recreation, special events and other activities occurring adjacent to wildlife habitat. Although these activities would be more intense under this alternative, implementation of measures identified in this EIS would reduce impacts on wildlife and protect the natural habitat of wildlife species.

Minimum Management Alternative

No new construction or demolition would occur under this alternative. However, existing space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase. Therefore, wildlife could be disturbed by human activity. As stated in the Direct Impacts on Native Plant Communities Section, only those actions necessary to meet legislative requirements would be carried out. Management programs would be restricted to those that are already being conducted. This would result in reduced integrity of wildlife corridors and reduced habitat available for wildlife species. The health of the Presidio forest would also continue to decline, with limited efforts placed on rehabilitation. This would affect many of the bird species that use the forest structure for roosting, nesting, and foraging. The potential decline in forest health and limited diversification of the forest would decrease habitat values. These impacts, taken together, would be a significant impact. Measures identified in this EIS would ensure that wildlife resources are identified, protected and monitored.

NESTING HABITAT

All Alternatives

Tree and vegetation removal, trimming and pruning, and ground-clearing activities for construction, demolition and special events could result in the nest destruction, mortality, or disturbance of nesting, native migratory bird species or result in nest abandonment.¹ Increased development and reduced

habitat and forest restoration activities could also limit available nesting habitat for bird species on the Presidio.

No Action Alternative (GMPA 2000)

Depending on location and time of year, demolition and construction activities associated with this alternative could destroy nests or disturb nesting activities of birds protected under the Migratory Bird Treaty Act. In addition, ongoing use of the Presidio by visitors, tenants, and special events would continue. Without proper mitigation and controls, these activities could impact nesting wildlife.

As a federal agency, the Trust would be required to comply with the Migratory Bird Treaty Act. Measures identified in this EIS would require that any potentially disturbing activities be avoided during nesting season in sensitive areas, or if unavoidable, require pre-construction surveys during the nesting season, prohibit disturbance of active nests, and ensure that protected bird species that are nesting would not be destroyed or disturbed. Other measures, including restrictions on the use of artificial lighting and other intrusive activities, would further minimize the impact of this alternative.

All Other Action Alternatives (with the exception of Minimum Management)

Based on the similarities in the nature and type of activities proposed under all action alternatives (with the exception of Minimum Management, as described below), the types of impacts that could affect nesting wildlife would be similar to the No Action Alternative (GMPA 2000). Construction and demolition activities, as well as increased use levels would be subject to the mitigation presented in this EIS. Other measures including restrictions on the use of artificial light would also be implemented. The amount of available nesting habitat available for nesting birds, however, would vary by alternative, with the Resource Consolidation Alternative having the greatest increase [44 acres compared to the No Action Alternative (GMPA 2000)] in open space, and the Sustainable Community Alternative having the most substantial decrease in open space [22 acres less than No Action Alternative (GMPA 2000)]. Please refer to discussion under the Direct and Indirect Effects on Wildlife Section.

¹ Disturbance or destruction of nests, eggs, or individuals of the European starling and the house sparrow and other non-native bird species are not considered a significant impact, because these birds are non-native species.

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Minimum Management Alternative

Under this alternative, no demolition or new construction would occur, so nesting habitat would not be disturbed from these activities. However, visitor, tenant, activities would occur. As stated in the Direct and Indirect Effects on Wildlife Section, the Minimum Management Alternative would provide the least amount of open space compared to the No Action Alternative (GMPA 2000). This would result in a decrease of approximately 92 acres of potential nesting habitat for birds. The health of the Presidio forest would also continue to decline, with limited efforts placed on rehabilitation. This would affect many of the bird species that use the forest structure for roosting, nesting, and foraging. The potential decline in forest health, and limited diversification of the forest would decrease habitat values. Any expansion that would be required to ensure the health of the Crissy Field marsh would not occur. Thereby, if the marsh closes for a period of time, altering the marsh environment's salinity and water inundation footprint and tidal frequency, impacts to wildlife species would occur. Foraging potential, species richness, and nesting habitat would all be impacted. The movement of aquatic invertebrates and fish would be impacted. Water quality, temperature, the concentrations of suspended sediments and nutrients would all be influenced and could affect reproduction of aquatic organisms.

Additionally, this alternative would have the greatest habitat fragmentation and edge effect pressures from disturbance and potential increased use levels. Mitigation measures identified in this EIS would be required to monitor wildlife and restrict the use of artificial light to ensure that nesting habitat would not be disturbed. Overall, this alternative would have the least beneficial impact on nesting wildlife when compared to the No Action Alternative (GMPA 2000).

WILDLIFE MOVEMENT

All Alternatives

New construction, demolition and increased activities from Trust and tenant operations, special events and visitors could result in disruptions to wildlife movement by removing habitat from wildlife corridors or by concentrating intensive human activities in or adjacent to wildlife corridors.

No Action Alternative (GMPA 2000)

Wildlife corridors would benefit from the native plant habitat restoration and enhancement, forest restoration and wetlands and drainage corridor restoration that would occur under this alternative. At the same time, activities associated with the 1.1 million sf of demolition and 170,000 sf of new (replacement) construction, to the extent that they occur in or adjacent to wildlife corridors, could disrupt wildlife movement and migration. Intensive activities, including recreation and special events, in or adjacent to wildlife corridors, could also be disruptive. Future site-specific planning and environmental review would take into consideration and promote wildlife corridors, especially as the focus of habitat restoration activities, wherever feasible and beneficial for the resource, to reduce potential impacts.

Final Plan Alternative

This alternative would result in 1.1 million sf of demolition and 710,000 sf of new (replacement) construction. As with the No Action Alternative (GMPA 2000), the potential exists for disruption to wildlife movement or migration from demolition, construction, or intensive human activities proposed by this alternative that are sited in or adjacent to movement corridors.

In particular, development at the Nike Missile Site could further fragment habitats already adjacent to an urban interface. The proposed use of this area [proposed for native plant restoration under the No Action Alternative (GMPA 2000)] for institutional/ residential use could effect the movement and health of the limited population of the California quail, in this area as well as other nesting, roosting and foraging species. The existing wetland habitat could also be affected for wildlife use. Fragmentation and increased disturbance from invasive exotic species, buildings and infrastructure, and potential increased use levels would limit the viability of both wildlife habitats and wildlife movement within these and adjacent areas. Increased potential visitor, tenant, pet use, and associated human disturbances within these areas would also potentially affect wildlife movement within the corridor. Implementation of the mitigation measures identified in this EIS, including those restricting the use of invasive exotic species and installation of protective barriers, would help reduce the impact. However, future proposals for these sites would be subject to site-specific planning and environmental

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review. Depending on the specific proposals for these sites, consultation with USFWS and the Army Corps of Engineers may also be required to ensure compliance with FESA and Section 404 of the Clean Water Act. Overall, the potential for disrupting wildlife under this alternative could be greater than the No Action Alternative (GMPA 2000).

Final Plan Variant

This alternative proposes approximately 1.23 million sf of demolition and no new construction. Potential effects on wildlife movement resulting from demolition activities and/or proposed land uses/special events would be similar to those described for the No Action (GMPA 2000) and Final Plan Alternatives. However, to the extent that the Final Plan Variant would provide more open space than would the No Action Alternative (GMPA 2000), it would have an increased potential of enhancing wildlife corridors, specifically within the lower Tennessee hollow corridor and Crissy Field marsh ecotone. Future site-specific planning and environmental review would direct the focus of restoration to corridors supporting wildlife movement wherever feasible. Overall, this alternative would have a beneficial effect on wildlife movement.

Resource Consolidation Alternative

This alternative proposes approximately 1.9 million sf of demolition and 1.2 million sf of new (replacement) construction. Potential effects on wildlife movement resulting from this activity and/or land uses/special events would be similar to those described for the No Action (GMPA 2000) and Final Plan Alternatives. However, to the extent that the Resource Consolidation Alternative would provide more open space than would the other alternatives, it would have the greatest potential of enhancing wildlife corridors. Future site-specific planning and environmental review would direct the focus of restoration to corridors supporting wildlife movement wherever feasible. Overall, this alternative would have the most beneficial effect on wildlife movement.

Sustainable Community Alternative

The Sustainable Community Alternative provides for approximately 620,000 sf of new (replacement) construction, a substantial increase from the No Action Alternative (GMPA 2000). In addition, this alternative would provide less demolition than the No Action Alternative (GMPA 2000), and an increase in visitor use. Combined, these could result in increased intensive activities, including recreation and special events, in or adjacent to wildlife corridors, which could be disruptive to wildlife. Therefore, the potential for disrupting wildlife under this alternative could be greater than the No Action Alternative (GMPA 2000). Future site-specific planning and environmental review would also take into consideration and promote wildlife corridors, especially as the focus of habitat restoration activities, wherever feasible and beneficial for the resource, to reduce potential impacts. Future site-specific planning and environmental review would identify and promote wildlife corridors as the focus of habitat restoration activities wherever feasible to reduce impacts. In addition, implementation of the mitigation measures identified in this EIS would be required in future site-specific planning to further reduce the impact of demolition, construction, and land/visitor use on wildlife.

Cultural Destination Alternative

In general, the impacts associated with demolition and construction would be similar to the Final Plan Alternative; however, they would be more intense under this alternative due to the increase in proposed square footage (for both demolition and construction). Implementation of the mitigation measures identified in this EIS would be required in future site-specific planning to reduce these effects. The site-specific impacts on wildlife corridors, and protective mitigation measures under this alternative would also be similar to those described in the Final Plan Alternative. However, this alternative would provide approximately 13 acres more open space than the No Action Alternative (GMPA 2000), and could have a greater potential of enhancing wildlife corridors. Future site-specific planning and environmental review would direct the focus of restoration to corridors supporting wildlife movement wherever feasible.

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Minimum Management Alternative

Under this alternative, there would not be any demolition, new construction, or increased habitat restoration, so existing wildlife corridors would not be altered or enhanced. However, corridors providing wildlife movement would continue to be fragmented, which would limit wildlife movement within the Presidio. This would be a significant adverse impact on wildlife movement.

DIRECT AND INDIRECT EFFECTS ON SPECIAL-STATUS PLANTS

All Alternatives

Direct loss of special-status plants, or actions affecting reproductive success, population size, natural distribution, and/or natural processes necessary to perpetuate a special-status (rare, threatened or endangered) species, including loss or degradation of habitat function and size, or reductions in numbers of individuals or loss of habitat to levels below those required to sustain any native plant population could result from demolition, new (replacement) construction and/or land use and special event activities located in areas that provide habitat for special-status plant species. All actions that could affect federally threatened or endangered species would be coordinated in consultation with the USFWS.

Please refer to the discussion in the Direct and Indirect Effects on Native Plant Communities Sections for additional applicable mitigation measures and protective actions.

No Action Alternative (GMPA 2000)

Under this alternative, all 13 rare or endangered plant species currently on the Presidio would be identified, protected, enhanced and monitored. The VMP would guide all protection, restoration, and enhancement of vegetation resources, including the implementing objectives for restoring habitat necessary to recover and expand special-status species populations. Restoration activities would focus on actions identified by USFWS to recover the five federally listed plant species found on the Presidio, and expand their associated habitats. Removal of Wherry housing and restoration of the area as

native dune habitat, restoration of the serpentine grassland and scrub communities at Inspiration Point, and the coastal serpentine bluffs would have a beneficial impact by substantially increasing habitat necessary for the recovery of special-status species within those areas.

Future site-specific planning and environmental review would ensure that indirect impacts on any special-status species from adjacent demolition, new (replacement) construction or land uses would also be removed by providing buffers between sensitive resources and intensive activities or through other effective measures. Where buffers are not feasible, fencing or other barriers would be erected. Best management practices for activities within and adjacent to special-status species habitat would be developed and applied. The importation and use of incompatible soil material for ecological restoration efforts, and the inadvertent importation of invasive exotic seeds and plant materials in erosion control and soil materials used in construction and demolition projects would be prohibited. In addition, a program to ensure that their protection is accomplished over the long-term, monitoring and restoration of the Presidio's special-status species, including the critical control of invasive non-native plant species, would be in place. Taken together, these measures would protect special-status species from indirect impacts. In addition, populations of both the San Francisco gumplant and the San Francisco owl's clover are found in the developed sections of the Fort Scott Planning District. Best management practices would be implemented to protect them, and any other special status species population located within a developed area, as well as their associated habitats. These best management practices would be developed such that the management of these resources would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these best management practices and other requirements listed in this EIS, would be implemented to prevent negative effects.

In conclusion, the No Action Alternative (GMPA 2000) would provide an overall increase in the quality and quantity of habitat for special-status species. Direct and indirect impacts to special-status species associated with demolition, construction and increased land use activities would be minimized and/or eliminated through implementation of the mitigation measures

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identified in this section. Overall, this alternative would have the most beneficial effect on native plant communities and subsequently special-status species restoration, and would provide a substantial increase in the amount of existing open space. Impacts associated with proposed demolition, new (replacement) construction, and other disturbances would be minimized through implementation of the required mitigation.¹

Final Plan Alternative

The general effects associated with demolition, construction and land/visitor use (and corresponding mitigation requirements) described above for the No Action Alternative (GMPA 2000) would similarly apply for this alternative. Similarly, the beneficial effects from increased habitat restoration in the Inspiration Point, coastal serpentine bluff communities and phased removal of housing structures at Wherry housing would apply under this alternative. Under the Final Plan Alternative, the Nike Missile Site (above the Nike swale) would be used for institutional/residential uses. This area of existing development is proposed for native plant habitat restoration under the No Action Alternative (GMPA 2000), and is directly north of San Francisco lessingia habitat and the proposed Northern Recovery Unit (per the draft Recovery Plan for the Coastal Plants of the Northern San Francisco Peninsula). The precise effect of the change in land use on adjacent habitat would depend on the type and extent of development proposed. Future activities would be subject to the mitigation measures presented in this EIS, as well as site-specific planning and environmental review. The mitigation measures identified in this EIS require use of buffer areas to protect sensitive species and restrictions on the use of non-native invasive plant species. In addition, the Trust would ensure compliance with the objectives and criteria of the Recovery Plan.

Additionally, the conversion of developed area (approximately 4 acres) within the western West Washington Housing area to open space, would reduce potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressure) on adjacent native plant communities, and result in the restoration of central dune scrub and potentially oak woodland habitat. This habitat would be contiguous with habitat currently proposed for future

San Francisco lessingia recovery, and could support the establishment of lessingia and other rare dune annual species.

Populations of both the San Francisco gumplant and the San Francisco owl's clover are found in the developed sections of the Fort Scott Planning District. Best management practices would be implemented within and adjacent to these areas, and other outlier native plant and vestige wetland resources to protect them and their associated habitats. These BMPs would be developed such that the management of these resources would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Visitor activities could also increase the potential for off trail use, increasing trampling and erosion. Potential development within this area could also affect habitat for three other special-status species (the San Francisco spineflower, the San Francisco wallflower, and dune gilia). However, the mitigation measures identified for San Francisco lessingia and other federally-listed species would ensure protection of these species.

In conclusion, the Final Plan and No Action (GMPA 2000) Alternatives would have similar overall special-status plant species impacts, with the Final Plan Alternative having a greater potential to effect San Francisco lessingia habitat south of the Nike Missile Site. However, through the implementation of the mitigation required in this EIS, the effects to lessingia and other special-status plant species would be minimized, and the Trust would work cooperatively with the USFWS to ensure that relevant Recovery Plans are effectively implemented.

All Remaining Alternatives (Except Minimum Management)

Impacts of the remaining alternatives (except Minimum Management) on special-status plants would similar to the No Action Alternative (GMPA 2000). The mitigation measures presented at the end of this section apply to these alternatives.

Minimum Management Alternative

No new construction would occur under this alternative, so there would not be any adverse impact on existing special-status plant populations from new

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construction. However, the retention of the Wherry housing would preclude recovery of a federally-endangered plant species, the San Francisco lessingia, which would be a significant, adverse impact.

Under this alternative, recovery objectives and actions for 3 other federally-listed plant species (the Presidio clarkia, Marin dwarf flax, and Raven's manzanita) would not be fully achieved on the Presidio, and could result in the inability to recover those species.

Best management practices, restrictions on the import and use of incompatible soils in restoration efforts, and control of invasive exotic plant species would be required to protect these species. In addition, populations of both the San Francisco gumplant and the San Francisco owl's clover are found in the developed sections of the Fort Scott Planning District. Best management practices during operations and for increased use levels within and adjacent to these areas would be necessary to protect these species.

Overall, the Minimum Management Alternative would have the least beneficial effect on the protection, habitat enhancement and recovery of special-status species on the Presidio. The retention of Wherry housing and potential reduction of habitat restoration efforts in 140 acres of available habitat would have an adverse impact on special-status plant species.

DIRECT EFFECTS ON SPECIAL-STATUS WILDLIFE

All Alternatives

Demolition and new (replacement) construction could result in the take of special-status (rare, threatened or endangered) wildlife species, or adversely affect the reproductive success, population size, natural distribution, and/or natural processes necessary to perpetuate a special-status wildlife species; reduce numbers of individuals or loss of habitat to levels below those required to sustain any native population; interfere with movement of any sensitive wildlife species; or result in loss or degradation of habitat function and size resulting in fragmentation and habitat loss. Additionally, the increase in use levels (including recreation activities, special events, pet use, etc.) could result in disturbance to special-status wildlife species.

Please refer to the discussion in the Direct and Indirect Effects on Wildlife Sections for additional applicable mitigation measures and protective actions.

No Action Alternative (GMPA 2000)

Although the restoration of native habitats, and the rehabilitation and diversification of the historic forest proposed under this alternative would benefit special-status animals, other activities could potentially have adverse impacts. New (replacement) construction and high intensity recreation and land use activities within or adjacent to habitats that support special-status wildlife could adversely impact these resources. The rehabilitation and/or conversion of historic structures and demolition of non-historic structures could result in the modification and/or loss of potential habitat for the special-status species (candidate) *Yuman myotis* bat. *Yuma myotis* is somewhat tolerant of human disturbance and is one of the few species of bats persisting in relatively urbanized areas. In addition, proposed construction and demolition activities could affect overwintering habitat for the monarch butterfly. The overwintering phenomenon is considered sensitive by the CDFG. Mitigation identified in this EIS would require site-specific surveys at the time a particular activity is proposed. Information obtained during the survey would be used to design and implement protective measures (see mitigation section for additional detail).

Best management practices for activities within and adjacent to special-status wildlife habitats and corridors would be developed and applied. Long-term monitoring would occur to ensure protection of sensitive wildlife species. Measures identified in this EIS would require that any potentially disturbing activities be avoided in areas supporting nesting or residing special-status wildlife species. For unavoidable activities, all actions that could affect federally, or state-listed threatened or endangered species would be coordinated in consultation with the USFWS, and CDFG respectively.

In conclusion, the No Action Alternative (GMPA 2000) would provide an overall increase in the quality and quantity of habitat for special-status species. Direct and indirect impacts to special-status species associated with demolition, construction and increased use levels would be minimized and/or eliminated through implementation of the mitigation measures identified in this section. Overall, the restoration activities proposed under this alternative

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would have a beneficial effect special-status species. Impacts associated with proposed demolition, new (replacement) construction, and other disturbances would be minimized through implementation of the required mitigation.

All Remaining Alternatives (Except Minimum Management)

Based on the similarities in the nature and type of activities proposed under all action alternatives (with the exception of Minimum Management as described below), the types of impacts that could affect special-status wildlife would be similar to the No Action Alternative (GMPA 2000) described above. The mitigation requirements described above, including pre-construction/demolition surveys and consultation with relevant resource agencies, would be implemented for all alternatives.

Minimum Management Alternative

Under this alternative, there would be no new development, so habitat for special-status animal species would not be affected from construction and demolition activities. However, habitat restoration efforts for plant and associated wildlife values would not increase beyond current restoration efforts, and in comparison to the No Action Alternative (GMPA 2000) this would represent a reduction in potential habitat for special-status wildlife species.

MITIGATION MEASURES

The following measures would apply to all alternatives.

Adapted from the GMPA EIS Measures

NR-1 Native Plant Communities. To reduce the possibility of colonization by non-native plant species, areas of native vegetation disturbed by construction, infrastructure repair, and increased land use activities would be immediately revegetated with native species. A site-specific revegetation plan would be prepared for each construction project affecting areas of native vegetation. Revegetation needs would be identified early to allow time to establish seedlings from onsite plants and thus avoid contamination of the gene pool. Wherever possible, planting materials (seeds and cuttings) from

the local Presidio gene pool would be used. The Trust would support a native plant propagation center and nursery to ensure that local stock was available for use in revegetation. The Trust would consult with the Soil Conservation Service, the California Native Plant Society, National Park Service, Golden Gate National Parks Association and other technical experts on native plant propagation techniques. All revegetation efforts would be protected by buffers and/or barriers during establishment, and maintained and monitored for at least three years.

NR-2 Wildlife. A wildlife survey of Area B would be prepared as part of the Vegetation Management Plan. A monitoring program would be established to identify potential cumulative and activity/site-specific impacts on birds and other species. From monitoring information, best management practices would be developed to reduce any impacts.

NR-3 Threatened, Endangered, Rare and Sensitive Species. To ensure long-term protection and mitigate any visitor-related impacts, a Presidio-wide inventory and monitoring program for rare and endangered plant and animal species would continue, and all populations would be protected and restored. Future wildlife and aquatic species surveys would be completed and if they uncover additional animal species of concern, management objectives would be developed and programs implemented for the particular species.

New Mitigation Measures

NR-4 Special – Status Species. Rare or endangered plant species, including any federal-and state-listed threatened and endangered species that are found to occur in the Presidio, would be monitored annually and protected. Actions would be taken to recover these species, and their habitats would be enhanced. Any future rare or endangered species found on the Presidio would also be afforded the same protection and restoration measures. All special-status wildlife would be inventoried and monitored, and habitat would be protected and restored. Restoration activities would focus on actions necessary to recover the five federally-listed plant species found on the Presidio, and restore their associated habitat in compliance with the FESA. During future site specific planning and environmental review, the Trust would review future projects to ensure that proposed uses and activities are consistent with

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and help further the recovery objectives stated in any relevant adopted Recovery Plans.

NR-5 Wildlife and Native Plant Communities. To protect wildlife and native plant communities, the Trust would implement the following measures:

- Schedule heavy equipment use, to the greatest extent feasible, to avoid areas where soils are wet and prone to compaction;
- Enforce leash restrictions;
- Implement non-native wildlife control measures;
- Provide signage and/or other educational devices to encourage voluntary compliance with protection measures;
- Prevent unnecessary vehicular and human intrusion and use into native and sensitive habitat communities from adjacent construction, demolition and intensive special events and recreation activities;
- Prohibit the use of erosion control measures and mulches that contain non-native plant seeds;
- Prohibit the use of irrigation, fertilizers, and herbicides in areas adjacent to, or up-gradient from sensitive biologic resources; and
- Prepare interpretive materials and signage in areas of increased tenant use adjacent to natural habitat areas and sensitive native plant communities.

In addition, during project planning, site construction of new development and planned intensive human activities would be located at least 100 feet from the edge of existing native plant communities and/or assemblages. If this is not feasible, the following measures should be used:

- Install protective fencing or other barriers around affected native plant communities and natural habitat;
- Plant dense native vegetation buffers to discourage access by humans, pets, and equipment into the native plant communities and other sensitive natural habitats for wildlife;
- Regularly inspect the affected areas for any impacts or damage to biological resources;
- Revegetate native plant areas affected by construction immediately with native plant species appropriate to the area and grown from local seed stock, to reduce the potential of colonization by non-native species. If a natural resource specialist determines that interim erosion control and site

stabilization measures would be beneficial, this measure would be implemented prior to revegetation;

- Prepare and implement site-specific restoration action and/or revegetation plans. Native plant material would be grown and collected in and from Presidio resources;
- Monitor potential impacts of these protected areas from increased visitor and tenant use and install and/or modify protective fencing if impacts to resources occur; and
- Coordinate all future trail planning and recreational activities in areas adjacent to habitat restoration sites and sensitive wildlife habitat with an interdisciplinary team including a qualified biologist or natural resource specialist.

NR-6 Best Management Practices. Establish and implement both Presidio-wide and site-specific best management practices for construction/demolition activities, development of new and/or expanded tenant and visitor activities and special events adjacent to natural habitats.

NR-7 Artificial Light. Minimize the intrusion of artificial light into the night scene of ecosystems, and limit the level of human-caused sound during construction-related activities, public and tenant events, changed land use activities, overall plan development, and site planning. Restrict the use of artificial lighting to those areas where security, basic human safety, and specific cultural resource requirements must be met. Use minimal-impact lighting techniques, and shield the use of artificial lighting to prevent the disruption of the night sky, physiological processes of living organisms, and similar natural processes. Develop standard measures for lighting that ensure minimum disturbance to areas of natural darkness, and wildlife habitat, and reduce excess fugitive light in natural areas. Ensure no gain in light levels in natural habitats, to the greatest extent feasible. Develop and implement best management practices minimizing interior and exterior fugitive light and sound.

NR-8 Natural Sounds. Identify areas important to natural soundscapes, both for recreation and wildlife, and monitor when construction, special events or other activities occur that could be detrimental to this value.

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Identify mitigation measures on a project-specific basis, which could include seasonal restrictions based on nesting activity.

NR-9 *Wildlife and Wildlife Habitat.* To reduce the effects on wildlife and wildlife habitat during implementation of future projects:

- A qualified wildlife biologist would conduct a site visit during project planning and assess the potential for any sensitive wildlife species, including bats, or their habitat to occur on or adjacent to the project site. If sensitive animal species are found, the project would be redesigned or project timeline modified in accordance with the biologist's recommendations to avoid impacts. If avoidance is not feasible, species-specific and site-specific mitigation plans shall be developed, and regulatory agency consultation pursued (if needed) to mitigate direct take and replace habitat for the impacted species; and
- Any vegetation removal would follow the park guidelines for protection of nesting birds. This includes guidelines on timing of vegetation and removal.

NR-10 *Crissy Field Marsh.* No long-term leasing or new construction will be allowed in the area between the Commissary parking lot and the historic Mason Street warehouses for two years, which is the estimated duration of the Crissy Field Marsh Expansion Technical Study. Following the study, restoration planning and implementation efforts would be undertaken by the Trust in coordination with the NPS, GGNPA, and other stakeholders, and long-term leasing or new construction would be avoided in any agreed upon expansion area(s).

NR-11 *Public Health Service Hospital.* To ensure additional protection of the existing wetland and lessingia habitat near the PSH, the following measures would be implemented:

- Proposed uses of the Nike Missile site would be designed or otherwise conditioned to minimize changes in the local hydrology such that surrounding native vegetation is not adversely impacted.

NR-12 *Cumulative Activities.* Cumulative disturbance to natural habitat areas would not exceed 20 acres within any given year. No more than 5 acres

of that disturbance should be concentrated within one wildlife corridor, sensitive habitat or plant community without approval from a professional ecologist. This would not apply to disturbances created by natural storm or environmental events, which, if such events occur, would be restored or treated consistent with natural resources objectives. If this threshold value must be exceeded, then a professional ecologist would approve a strategy for implementing the proposed projects, and would identify any additional resource protection mitigation prior to the implementation of specific projects. Any projects that contribute to exceeding the value would have approved biological monitoring guidelines in place.

4.3.2 WATER RESOURCES

METHODOLOGY

The hydrologic impact assessment addresses the alternatives' potential effects on surface and groundwater hydrology and hydrologic resources. These resources include watersheds, drainages, lakes, creeks, springs, seeps, and groundwater aquifers and infiltration areas.

To assess the potential for direct impacts on wetlands, streams and associated resources, the extent of new (replacement) construction in each planning district was reviewed for each alternative in relationship to base maps of wetlands and streams as described in the Affected Environment Chapter. It was assumed that new construction could be sited within developable areas shown in Figures 3, 5, 6a, 7, 9, 11, and 13 of the Alternatives Chapter. All new (replacement) construction would be limited to developed areas.

Indirect impacts, including downstream erosion and sedimentation, other effects on wetlands, and streams. This analysis considers the location of potential demolition and new (replacement) construction and increased use levels (e.g., trampling, clearing of vegetation) in relation to downstream hydrologic resources. To address indirect impacts on wetlands, streams and associated resources, the maps were again reviewed to identify those resources that could be affected. If resources could be potentially affected, mitigation measures were identified to reduce impacts (see the end of this section). In addition, refer to Section 4.6.3 (Storm Drainage) for additional analysis of stormwater.

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POTENTIAL IMPACTS

DIRECT AND INDIRECT IMPACTS

All Alternatives

Impacts on wetlands, streams, associated freshwater marsh, seep, and riparian vegetation, and other hydrologic resources could result from adjacent demolition or construction activities, or increased human activity (e.g., trampling by dogs and humans, clearing of vegetation) from adjacent land uses, including recreational activities. Under all alternatives, however, there would be no net increase in new development (i.e., proposed demolition would always be greater than proposed new construction). Additional impacts could also result from activities that redirect or increase/decrease surface and groundwater flow, alter aquifer recharge, or increase and concentrate impervious surface area, thereby increasing runoff volume and velocity, resulting in increased erosion.

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would increase the area of open space from about 695 acres to about 794 acres, and would expand the acreage of native plant habitat from about 70 acres to 210 acres, including wetland vegetation. Restoration of hydrological processes would occur within the three tributaries of Tennessee Hollow creek system and Dragonfly creek, and would improve the natural process of the creek and riparian corridors. The restored Tennessee Hollow riparian corridor would connect to an expanded tidal marsh at Crissy Field. Wetlands at Mountain Lake would also be enhanced and protected. As a result of these efforts, this alternative would improve the quality of wetland and stream resources within the Presidio.

The No Action Alternative (GMPA 2000) provides for approximately 1.12 million sf of demolition and 170,000 sf of new development. Depending on its location, new development or increased recreational and land use pressures could affect the following wetlands and stream drainages, which are located within or directly adjacent to landscaped areas or development areas (presented by planning district/general use areas).

Main Post:

- Potential jurisdictional and NWI wetlands near Battery Blaney north of Doyle Drive;
- NWI wetland between Doyle Drive and Lincoln Boulevard, near Building 150;
- NWI wetland near Building 654 north of Doyle Drive by intersection of Mason Street and Crissy Field Avenue; and
- Potential jurisdictional and NWI wetlands within drainage, and drainage southeast of southeast corner of Cemetery west of Infantry Terrace.

Residential neighborhoods:

- Potential jurisdictional wetland near Pop Hicks Field west of Quarry housing; and
- Potential jurisdictional and NWI wetlands south of Presidio Boulevard near Footbridge west of Presidio Terrace.

South Hills:

- Drainage and potential jurisdictional wetland east of Mountain Lake in Golf Course; and
- potential jurisdictional wetland east of West Washington neighborhood immediately west of Compton Road and north of Washington Boulevard.

Fort Scott:

- Potential jurisdictional wetlands north of Fort Scott, near Miller Road;
- Potential jurisdictional wetlands adjacent to Battery Howe-Wagner

As further details about site-specific activities affecting wetlands and stream corridors are developed, the Trust would undertake applicable compliance steps, including obtaining any necessary permits, under the Clean Water Act Section 401, 402, and 404 programs. These permits would require avoidance, to the greatest extent feasible, and compensation for most impacts on wetlands and streams. The Clean Water Act regulatory process requires compliance with federal "no net loss of wetlands" policies, and includes a public and agency review process and a Section 404 (b)(1) alternatives analysis that would in practice be likely to require avoidance of impacts on aquatic habitats or compensation for losses in extent and values. Best management practices would be implemented within and adjacent to these wetland areas, and other

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vestige wetland resources, to protect them and their associated habitats. These best management practices would be developed such that the management of the wetland habitats would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these BMPs and other requirements listed in this EIS, would be implemented to prevent potential negative effects.

The integrity of groundwater infiltration areas and aquifer systems, and surface and groundwater levels, and the rate and direction of surface and groundwater flow could also be directly affected by new development. Therefore, mitigation would be required to provide for the preservation and avoidance of all unique geologic and subsurface water features to the greatest extent feasible, and/or compensation for impacts on infiltration areas, aquifer systems, and geologic stratigraphy on the Presidio.

New construction could concentrate impervious surface area, increasing runoff volume and velocity, resulting in increased erosion. Future site-specific planning would ensure that all newly constructed impervious surfaces address and prevent, to the greatest extent feasible, increased water runoff volume and velocity, as well as reduced water infiltration.

Staging and storage areas could also disturb adjacent wetlands, streams and associated habitats. If fuels, chemicals or other liquids stored adjacent to wetlands or streams were to spill, they could contaminate water and soils. High intensity land uses (including recreational activities) adjacent to wetlands or stream drainages could result in indirect impacts, such as trampling from informal access by people and their pets. Visitor access would be guided under the Presidio Trails and Bikeways Plan to protect sensitive resources. Visitor numbers and uses would be monitored and measures taken to reduce visitor impacts on wetlands and drainages. Future site-specific planning would ensure that measures would be developed to prevent visitors from trampling vegetation and creating social trails in wetland habitat. In addition, protective buffer zones would be established between wetland and riparian habitats and project-related disturbances to prevent construction and construction-related activity encroachment into the habitat areas and reduce potential disturbances. Barriers and restrictions if necessary would also be

implemented to discourage inappropriate activities that could degrade wetlands and streams.

In conclusion, the demolition, construction and new land uses proposed under the No Action Alternative (GMPA 2000) could result in potential wetland degradation and disturbance. Through the mitigation measures required in this EIS, the effect of these activities and subsequent impacts would be minimized. Overall, the restoration of hydrologic processes and expansion of open space areas proposed under the No Action Alternative (GMPA 2000) would offset potential impacts providing a long-term beneficial effect on wetland resources.

Final Plan Alternative

Under the Final Plan Alternative, existing open space would be increased from 695 to 794 acres, which is the same amount of open space that would be realized under the No Action Alternative (GMPA 2000). Although the Final Plan proposes less demolition than the No Action Alternative (GMPA 2000), there would be an overall increase in new (replacement) construction and use levels. Therefore, there would be a higher potential for wetland impacts. As described for the No Action Alternative (GMPA 2000), all new construction would be limited to developed areas, and would be subject to the mitigation required in this EIS. Overall, the impacts of the Final Plan Alternative would be similar to the No Action Alternative, with the following exceptions.

Under the Final Plan Alternative, Nike Missile Site (above the Nike swale) would support institutional/residential uses. This area is proposed for native plant habitat restoration under the No Action Alternative (GMPA 2000). The southern area contains potential jurisdictional wetlands. The precise effect of the institutional/residential uses would depend on the type and extent of projects proposed. Development within the Nike Missile Site could affect the hydrology of this wetland system by potentially altering the infiltration to, and integrity of groundwater infiltration areas and aquifer systems. Based on its upland and more distant location, the Nike Missile Site would likely have minimal direct impact on the existing wetland. Use of best management practices and other standard drainage and vegetation protection measures would be required, and would help ensure the wetland system is not impacted.

ENVIRONMENTAL CONSEQUENCES

Natural Resources

Under the Final Plan Alternative, the Trust commits to the long-term ecological viability of Crissy Marsh. The Trust, in partnership with the NPS and Golden Gate National Parks Association has initiated the Crissy Marsh Expansion Technical Study to consider a broad array of options to achieve this.

Depending on its location, demolition, new (replacement) construction and increased use levels/activities in landscaped and existing developed areas could affect the same wetland and drainage features described under the No Action Alternative (GMPA 2000). Future site-specific area planning would strive for "no net loss" of wetland features, and include applicable compliance steps. Best management practices would be implemented to these wetland resources to protect them and their associated habitats. These best management practices would be developed such that the management of the wetland habitats would be consistent, to the greatest extent feasible, with the objectives set forth in the native plant community zone of the VMP. Future site-specific planning and environmental review, in conjunction with these BMPs and other requirements listed in this EIS, would be implemented to prevent potential negative effects. As described in the mitigation section, if avoidance of wetland features and hydrologic resources is infeasible, compensation would occur. Additionally the Trust is committed to developing further details, guidelines and policy consistent with wetland planning principles, as the Trust undertakes site specific planning.

The integrity of groundwater infiltration areas and aquifer systems, and surface and groundwater levels, and the rate and direction of surface and groundwater flow could be altered by new (replacement) construction. Future planning and environmental review processes would consider this on a site-specific basis and mitigation would be required to provide for the preservation and avoidance of unique geologic and subsurface water features to the greatest extent feasible, and/or compensation for impacts on infiltration areas, aquifer systems, and geologic stratigraphy on the Presidio.

Beneficial impacts would result from the enhancement of Mountain Lake and restoration of Dragonfly Creek and the three tributaries in Tennessee Hollow creek, and the demolition of housing, removal of impervious surfaces and the

reduction of below ground infrastructure in segments of the South Hills Planning District.

In conclusion, the Final Plan Alternative would have a similar wetland restoration benefits that would be realized under the No Action Alternative (GMPA 2000). The direct impacts associated with proposed demolition, construction and land use activities would be minimized through implementation of mitigation measures identified in this EIS. Future site-specific planning and environmental review would also be completed.

Final Plan Variant

Under the Final Plan Variant, existing open space would be increased from 695 to 819 acres, which represents an increase (25 acres) in open space greater than would be realized under the No Action Alternative (GMPA 2000). As with the No Action Alternative, the three tributaries and expanded riparian corridor of Tennessee Hollow would be restored, connecting to an expanded marsh at Crissy Field. The Final Plan Variant would also expand the lower reach of the Tennessee Hollow riparian corridor by approximately an additional 3 acres.

The Final Plan Variant proposes roughly 1.25 million sf of demolition, and no new (replacement) construction. The demolition could adversely affect wetland features if grading, staging, operations and/or landscaping were to occur in an area containing native plant communities or assemblages. In comparison to the No Action Alternative (GMPA 2000), this represents roughly 130,000 sf more demolition, and 170,000 sf less new construction. In addition, existing building space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase, similar to the No Action Alternative (GMPA 2000). Therefore, cumulatively this alternative could have a similar potential to disturb wetland resources as the No Action Alternative. The measures identified above for the No Action Alternative (GMPA 2000) would apply to this alternative and would minimize the potential loss or degradation of existing wetland features from direct and indirect/adjacent activities and disturbances. The impact on wetland resources within the developed areas, as described above for the No Action Alternative (GMPA 2000), would also be the similar for the Final Plan Variant.

ENVIRONMENTAL CONSEQUENCES

Natural Resources

Water resources would benefit from the demolition of housing, and removal of impervious surfaces and infrastructure within the South Hills, the Fort Scott, the Letterman, the Main Post and the PSH Planning Districts. Under the Final Plan Variant, an additional one-acre of native plant habitat would be restored north of Battery Sherwood, at the base of the western Crissy Field bluffs. This could provide the potential of increasing the remnant coastal scrub and fresh water wetland seep vegetation communities within this area.

Additionally, the width of the lower Tennessee Hollow corridor (directly south of Doyle Drive) would be increased by approximately 3 acres, and four Mason Street warehouses would be demolished to further increase potential habitat (about 2 acres) for an expanded Crissy Field marsh. These areas are proposed for mixed-use/office/residential and mixed-use/visitor/cultural focus respectively under the No Action Alternative (GMPA 2000).

The removal of an additional 3 acres of paved surfaces and buildings within the lower Tennessee Hollow reach would also potentially enhance creek restoration efforts with the Tennessee Hollow corridor. An increased riparian habitat buffer within the lower reach of Tennessee Hollow could reduce potential sedimentation and erosion, promote increased wetland function, increase wetland flora and fauna richness. Similarly, the removal of additional impervious surfaces associated with the Mason Street warehouses could increase restoration opportunities for ensuring the long-term ecological health of the Crissy Field Marsh.

The removal of approximately 5 acres paved surfaces within the northern Fort Scott Planning District could also increase freshwater wetland restoration efforts in this area. The precise effects of the above actions would depend on the type and extent of vegetation treatment and site specific wetland restoration proposed, as these areas are designated under the VMP as landscape vegetation, which would not preclude future site-specific wetland restoration. Increasing this open space could reduce potential edge effect pressures (e.g. from invasive non-native plant species and other urban pressures) by ensuring at least a 150-foot riparian corridor buffer throughout approximately 80 percent of the corridor. Other beneficial impacts, consistent with the No Action Alternative (GMPA 2000), would result from the enhancement of Mountain lake and restoration of Dragonfly Creek and the three tributaries in Tennessee Hollow creek, the expansion of the Crissy Field

Marsh, and the demolition of housing, removal of impervious surfaces and the reduction of below ground infrastructure in segments of the South Hills Planning District. Overall, the Final Plan Variant would have greater beneficial effect on wetlands than the No Action Alternative (GMPA 2000).

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, the potential for direct and indirect impacts on wetlands would be similar to that of the No Action Alternative (GMPA 2000). Although there would be substantially more construction and demolition under this alternative, the mitigation measures presented in this EIS would minimize the impact of these activities, and there would not be a net increase in new construction. In addition, existing building space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase. Water resources would also benefit from the demolition of housing, and removal of impervious surfaces and infrastructure in the South Hills Planning District and within the PSH Planning District. The removal of Quarry Road would also potentially increase the viability of the creek restoration efforts with the Tennessee Hollow corridor, increasing the width of the central Tennessee Hollow tributary riparian and upland corridor. The conversion of developed areas into open space within the central Tennessee Hollow corridor would enhance creek restoration efforts potentially reducing sedimentation and erosion, promoting increased wetland function, and increasing wetland flora and fauna richness. The removal of paved surfaces and buildings within the West Washington Housing Area could also increase freshwater wetland habitat directly west of Compton Road. The precise effects of the above actions would depend on the type and extent of vegetation treatment and site specific wetland restoration proposed, as these areas are designated under the VMP as landscape vegetation, which would not preclude future site-specific wetland restoration. Other beneficial impacts would result from the enhancement of Mountain lake and restoration of Dragonfly Creek and the three tributaries in Tennessee Hollow creek, the expansion of the Crissy Field Marsh, and the demolition of housing, removal of impervious surfaces and the reduction of below ground infrastructure in segments of the South Hills Planning District. Overall, the Resource Consolidation Alternative would have the greatest beneficial effect on wetlands.

ENVIRONMENTAL CONSEQUENCES

Natural Resources

Sustainable Community Alternative

Direct and indirect impacts on wetlands resulting from this alternative would be similar to but slightly less than those of the Final Plan Alternative. Demolition activities would be slightly lower than the No Action Alternative (GMPA 2000), but substantially higher for new (replacement) construction. Impacts could include the increased potential for habitat fragmentation, increased use levels, and potential natural resource conflicts in specific areas. The site-specific impacts on wetlands, and protective mitigation measures under this alternative would also be similar to those described in the Final Plan Alternative. Implementation of these measures and best management practices would minimize these impacts. Future site-specific planning and environmental review would also be completed.

Cultural Destination Alternative

Under the Cultural Destination Alternative, the potential for impacts would be similar to that of the Final Plan Alternative but more intense as this alternative proposes the greatest amount of new (replacement) construction, and second greatest amount of demolition, and overall use levels. In addition, existing space would continue to be leased, so activities associated with rehabilitation, business operations, residential uses, and recreational facilities would continue to increase. The site-specific impacts on wetlands, and protective mitigation measures under this alternative would also be similar to those described in the Final Plan Alternative. As with all of the alternatives, wetlands could be disturbed by demolition, construction, recreation, special events and other activities occurring adjacent to wetland habitat. Although these activities would be more intense under this alternative, implementation of best management practices and measures identified in this EIS would reduce impacts on wetlands.

Minimum Management Alternative

Under this alternative, restoration efforts would be restricted to those that are already being conducted. Many of the provisions identified in the GMPA or PTMP would not be implemented. The only major wetland restoration project that would be undertaken would be the Mountain Lake Enhancement Plan. Native plant communities would continue to occupy 70 acres, and ecological

restoration efforts would focus on only protecting and maintaining the integrity of existing habitat.

There would not be any demolition or new construction, so the loss of wetlands or stream corridors to new development would not occur. However, known losses to wetland resources would occur in 140 acres of the VMP native plant community zone, where restoration efforts would not be completed, and within remnant wetland habitat within the landscaped and forested areas of the Presidio. Losses to rehabilitation efforts necessary to restore the natural hydrologic processes and function within hydrologic resources, including Dragonfly creek, the three tributaries of the Tennessee Hollow creek, the dune slack north of the PSH and other wetland systems, would not occur. Any expansion that would be required to ensure the health of the Crissy Field marsh would not occur. Thereby, if the marsh closes for a period of time, altering the marsh environment's salinity and water inundation footprint and tidal frequency, impacts to wildlife vegetation and species would occur. Additionally, water quality, temperature, the concentrations of suspended sediments and nutrients would all be influenced and could affect reproduction of aquatic organisms. Activity levels and associated indirect impacts could increase, because existing space would continue to be leased. These combined would result in an adverse impact.

WATER QUALITY IMPACTS

All Alternatives

Erosion and sedimentation, discharges of other pollutants, and urban runoff could degrade the quality of water in wetlands and streams, and waters of the bay and ocean. These actions could degrade wetlands, streams, and associated resources adjacent to or downstream from demolition, construction and operational areas (including coastal riparian and wetland habitats in Area A).

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) has the potential to create indirect downstream impacts from erosion, sedimentation, and discharges of other pollutants resulting from demolition, new (replacement) construction, and various Presidio operations. Erosion and associated downstream sediment

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discharges could occur because of vegetation and soil disturbance from construction or demolition, or from increases in storm water runoff resulting from increased areas of impermeable surfaces. Pollution could also result from contaminants such as oil or grease entering the storm drain system and discharging into streams and wetlands.

Federal and state National Pollutant Discharge Elimination System (NPDES) permit requirements would address non point-source storm water pollution issues and other potential water quality impacts discussed above. The Trust would implement municipal pollution prevention activities, such as street sweeping and new development controls designed to prevent and reduce storm water and other water resource contamination. Regular monitoring and maintenance of oil/water separators would be performed to treat all storm water before discharge into Crissy Marsh and San Francisco Bay.

In addition, pavement would be removed and replaced with permeable surfaces as much as possible and other measures would be implemented to increase groundwater quality. The Presidio Stormwater Management Plan requires use of Best Management Practices and other measures to ensure that water flowing to creeks, the bay, marshes and the ocean meets water quality standards. Existing water resources would be further protected through the implementation of water conservation programs and waste disposal programs.

Finally, removal of undesignated trails (many on eroding soils or currently causing erosion of cultural and natural resources), and implementation of guidelines for maintaining trails such that they reduce erosion as called for in the Presidio Trails and Bikeways Plan would reduce indirect impacts to water resources.

All Remaining Alternatives (Except Minimum Management)

The remaining alternatives (except Minimum Management) would have greater potential than the No Action Alternative (GMPA 2000) to create indirect downstream impacts from erosion, sedimentation, and discharges of pollutants due to the higher levels of demolition, and in all but the Final Plan Variant, higher levels of new (replacement) construction, and operations. Continued implementation of the Presidio Stormwater Master Plan and the Presidio Trails and Bikeways Plan, together with implementation of

mitigation measures identified in this EIS would reduce indirect water quality impacts of these alternatives.

Minimum Management Alternative

There would be no new construction or demolition under this alternative, so there would be no indirect downstream impacts from erosion, sedimentation, and discharges of other pollutants resulting from demolition, new construction, and operations of proposed projects. However, pollution could result from contaminants such as oil or grease entering the storm drain system and discharging into streams and wetlands as a result of current management practices. Best Management Practices would be required to ensure that water flowing into creeks, the bay, marshes, and the ocean meet water quality standards.

MITIGATION MEASURES

The following measures would apply to all alternatives.

Adapted from the GMPA EIS Measures

NR-13 *Wetlands/Compliance.* As further details about site-specific activities affecting wetlands and stream corridors are developed, the Trust would undertake applicable compliance steps, including obtaining any necessary permits, under the Clean Water Act Section 401, 402, and 404 programs.

NR-14 *Visitor Management.* To reduce potential visitor impacts on the wetlands, adjacent storm drainages, and other areas meeting wetland criteria, visitor numbers and uses would be monitored on a recurring basis, and measures would be taken to reduce impacts as necessary. Informational leaflets, wayside signs, and regulatory measures would be employed as warranted.

New Mitigation

NR-15 *Best Management Practices.* The Trust would develop and employ Best Management Practices including but not limited to:

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- Maintaining appropriate erosion and siltation controls during construction, and permanently stabilizing all exposed soil or fill;
- Initiating water conservation programs and waste disposal programs for Trust operations as well as for residents and tenants, including education and monitoring;
- Ensuring that all newly constructed impervious surfaces prevent, to the greatest extent feasible, increased water runoff volume and velocity, reduced water quality and reduced water infiltration;
- Ensuring protection of normal movement, migration, reproduction, or health of aquatic fauna, including low flow conditions;
- Properly maintaining structures or fill so as to avoid adverse impacts to aquatic environments and public safety;
- Placing excavated fill on non-sensitive upland sites, and stabilizing all material with compatible erosion control techniques; and
- Monitoring storm drain run-off into Crissy Field Marsh and implementing measures to reduce any high levels of organics, sedimentation and contaminants.

NR-16 *Future Design.* During the future site-specific planning and environmental review processes, projects would be designed to preserve and avoid unique geologic, subsurface and surface water features, such as semi and confined aquifer systems, during construction, and demolition activities to the greatest extent feasible. Future projects would also be designed or otherwise conditioned to achieve the following: prevent interference with groundwater recharge such that there is no net deficit in aquifer volume or a lowering of, or obstruction to the groundwater table; and prevent alterations in drainage patterns, currents or course of direction of water movements.

NR-17 *Demolition and Construction Activities.* During future site-specific planning and environmental review, proposed demolition, new (replacement) construction and intensive human activities would be sited at least 100 feet (or greater distance if deemed necessary to avoid indirect effects) from the edge of existing wetlands, seeps, riparian vegetation or from the top of bank of unvegetated stream channels where feasible. If this is not feasible, the following measures shall be used:

- install fencing or other barriers adjacent to affected wetlands, streams and associated habitats to prevent inadvertent human, pet or equipment access in wetland systems. Other barriers could include the planting of dense native vegetations;
- regularly inspect the affected areas to enforce compliance; and/or
- provide signage and/or other educational devices to encourage voluntary compliance.

NR-18 *Compensation.* If it is not feasible to avoid losses to wetland or associated groundwater resources, the Trust would compensate for lost extent and value by implementing a compensatory mitigation program with quantifiable performance criteria and monitoring to document success. Corrective actions would be implemented if restoration success is not demonstrated through an adaptive management approach until all performance criteria are attained.

NR-19 *Future Design.* During the planning process, projects would be designed to prevent alterations to drainage patterns or water movement, in a manner that would result in erosion or siltation on or off site; prevent substantial runoff water which could exceed the capacity of either existing or planned storm water drainage systems, or the infiltration rates of surrounding soils; and prevent additional sources of polluted runoff. (Also see Storm Drainage mitigation at the end of Section 4.6.3.)

4.3.3 VISUAL RESOURCES

METHODOLOGY

For this EIS analysis, the description of each alternative was reviewed to determine the extent to which changes in Trust Management Plan (PTMP) could affect visual resources in the Presidio. The GMPA EIS was reviewed to determine if there are applicable mitigations that could be carried forward into the PTMP alternatives. Although no mitigation measures were identified specifically to address impacts to visual resources in the GMPA, measures designed to reduce impacts on the NHLD, including guidelines for new construction and treatment of the Presidio's cultural landscape, and for the protection of native plant communities, including historic forest restoration

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and non-historic forest removal, would serve to protect and enhance visual resources (see pages 28 through 30 of the GMPA EIS).

As part of the adopted Presidio Vegetation Management Plan (VMP) scenic vistas would be improved, and the extent to which each of the alternatives would implement this portion of the VMP is analyzed. Elements of each alternative were also evaluated to determine the extent to which they would lessen impacts on visual resources.

POTENTIAL IMPACTS

CHANGE IN VISUAL CHARACTER

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), cultural and natural resources throughout the Presidio would be protected and enhanced, historic buildings that contribute to the Presidio's status as a National Historic Landmark would be rehabilitated for new uses, some non-historic buildings would be demolished to enhance open space, native plant communities and riparian corridors would be restored, wetlands expanded (i.e., Crissy Field Marsh) and the historic forest would be rehabilitated and preserved as part of the cultural landscape. A number of structures would be removed to increase open space and enhance the natural environment, including Wherry housing, MacArthur housing, the PX and Commissary, and wings of the PHSH. The Main Post parade ground would be restored, Mountain Lake would be enhanced, and vegetation resources would be protected and enhanced as identified in the VMP.

The removal of approximately 1.12 million sf of existing structures would have a positive effect on the visual quality of the Presidio by opening historic view corridors and, because the majority of the buildings that would be removed are not considered historic (e.g., Wherry housing), their demolition would not be considered a negative effect. That is, they would not be buildings that contribute substantially to the visual character of the Presidio's built environment, which is largely tied to its historic character. Areas where buildings would be removed (and not replaced with new structures) would generally be used to reestablish native plant communities, which would

enhance the natural character of these areas. In particular, the removal of Wherry housing to increase open space and restore critical habitat would open historic view corridors to and from the Presidio.

Further, the No Action Alternative (GMPA 2000) would implement the VMP, which includes forest management and removal components that would open historic view corridors from important viewpoints throughout the Presidio, including Inspiration Point, Washington Boulevard near Rob Hill, Lincoln Boulevard overlooking Crissy Field, coastal defense batteries, and the Golden Gate Bridge viewing area. Also as part of the VMP, non-native vegetation would be removed or modified to retain historic visual connections, such as between Infantry Terrace and the Main Post.

New construction would be limited, but, where allowed, it would be compatible with the historic setting through elements of massing, scale, materials, style, and color, in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties. This would ensure that the historic character of the Presidio is not changed.

Under this alternative, important characteristics of the historic forest, such as framed views, windbreaks, and visual screens, would be restored or maintained. Historic vistas, such as those from Inspiration Point and Rob Hill, would be restored, protected, and maintained, and would offer improved visual access to the Golden Gate and the San Francisco Bay. New building heights would not exceed that of existing adjacent buildings or key landscape features, such as bluffs and forests. This would ensure that key views are not blocked, such as those near Crissy Field. Furthermore, efforts would continue to enhance views (such as views to nearby landmarks such as the Golden Gate Bridge, Marin Headlands, Angel Island, Alcatraz, the Palace of Fine Arts, and the city skyline), to restore historic visual connections, and to provide screening from elements that disrupt historic associations. These efforts would result in a positive effect by improving existing and restoring historic views.

This alternative has the potential to increase light or glare in the Presidio, which would affect the character of the Presidio and day and nighttime views. To prevent the loss of dark conditions and of natural night skies, the Presidio would seek the cooperation of residents and tenants to prevent or minimize the

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Natural Resources

intrusion of artificial light. The Trust restricts the use of artificial lighting to those areas where security, basic human safety, and specific cultural resource requirements must be met. Where artificial lighting is required, minimal impact lighting techniques and shielding of artificial lighting would be used where necessary to prevent the disruption of the night sky, natural cave processes, physiological processes of living organisms, and similar natural processes.

Final Plan Alternative

This alternative would reduce existing built space but would allow more development than would occur under the No Action Alternative (GMPA 2000). New built space beyond that considered in the No Action Alternative (GMPA 2000) could include infill in the Letterman Planning District and within the Fort Scott Planning District. Replacement construction for buildings that are demolished would be designed and limited to ensure that the association, feeling, and setting of the remaining elements of the historic cultural landscape would not be severed or impaired. Historic visual connections would be restored under this alternative and screening from elements that disrupt historic associations would be provided.

Like the No Action Alternative (GMPA 2000), there is potential for restoring historic views and creating positive visual changes with the removal of existing structures. In particular, the removal of Wherry housing to increase open space and restore critical habitat would open historic view corridors to and from the Presidio. Although there would be more new construction under this alternative all construction would be required to conform with the PTMP Planning Principles and District Guidelines which ensure that key views are not blocked, and the existing character is protected. Scenic views would be restored, maintained, and enhanced. Cultural resource mitigation measures further would ensure that development would be compatible with the character of existing historic structures in the Presidio and that the visual character of the Presidio would not be substantially altered.

Like the No Action Alternative (GMPA 2000), new construction under this alternative could introduce new light into the Presidio that could affect the character of the Presidio or day or nighttime views. Various controls

including requirements to shield light fixtures and restrictions on use of mercury lights would minimize potential adverse effects.

Final Plan Variant

The Final Plan Variant would result in less built space than either the No Action (GMPA 2000) and Final Plan Alternatives, and proposes no new construction, and greater building demolition. Under the Variant, the Presidio would minimize development, re-use historic buildings, adapt non-historic buildings to high priority uses, and expand open space.

Similar to the No Action Alternative (GMPA 2000), building removal would include the Wherry housing, the PX and Commissary to allow an expanded Crissy Field Marsh in Area B. The Final Plan Variant would also include additional demolition (i.e., East and West Washington apartments and historic warehouses along Crissy Field) to allow for enhanced native plant habitat restoration and expanded open space. With this demolition there is potential for restoring views and creating positive visual changes. The Final Plan Variant would have a beneficial effect on views by increasing open space in the south (e.g. Wherry housing site) as well as with the increase of the Crissy Field Marsh. Like the No Action Alternative (GMPA 2000), restoration of the Main Post parade ground, would result in a positive change to the visual character of the Main Post. The visual character of the Presidio would not be substantially altered. Scenic views would be restored, maintained, and enhanced. There would be no new sources of light or glare associated because there would be no new construction. Effects of light and glare would not change, or may decrease compared to existing conditions due to the reduction in developed uses.

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, the Presidio would substantially increase open space in the south and focus the built environment in the northern portion of the Presidio, including new infill construction for mixed use and housing. Buildings would be rehabilitated for new uses, and the primary goal would be the reuse of existing structures along with compatible new construction. This alternative would include more building

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Natural Resources

space than the No Action Alternative (GMPA 2000), but the overall square footage would be reduced compared to the existing conditions.

Similar to the No Action Alternative (GMPA 2000), building removal would include the Wherry housing, the PX and the Commissary to allow an expanded Crissy Field Marsh in Area B (subject to additional studies and environmental review) after removal of the PX and Commissary. This alternative would also include demolition in addition to that in the No Action Alternative (GMPA 2000), including removal of the entire PSH, East and West Washington apartments, and selected demolition along Crissy Field to allow for native plant habitat and open space restoration. In the areas where significant demolition takes place, this alternative would convert some of the roads to trials and pathways. This alternative, like the No Action Alternative (GMPA 2000), also includes restoration of the Main Post parade ground, which would result in a positive change to the visual character of the Main Post.

A potentially negative effect of this alternative would be the increased amount of new construction when compared to the No Action Alternative (GMPA 2000), however, new building heights would not exceed that of existing adjacent buildings or key landscape features, so new construction would not block key views. This alternative also provides for the restoration, maintenance, and enhancement of views. Furthermore, implementation of cultural resource mitigation measures described in Section 4.2 would ensure that development would be compatible with the character of existing historic structures in the Presidio, and that the visual character of the Presidio would not be substantially altered.

Like the No Action Alternative (GMPA 2000), development under this alternative could introduce new light into the Presidio that could affect the character of the Presidio or day or nighttime views. At the same time, because it would increase open space, which would not have extensive lighting, some portions of the Presidio would be darker than under current conditions. New lighting fixtures would be shielded and use of mercury lights would be prohibited to ensure that adjacent properties, including residential and natural areas, are not adversely affected by new lighting.

Sustainable Community Alternative

This alternative would allow more building square footage than the No Action Alternative (GMPA 2000). Wherry housing would be removed under this alternative to enhance native plant habitat. New construction under this alternative would be sited and designed to protect the character and integrity of the NHLD, and would be limited to the replacement of existing structures of similar size in existing areas of development, as provided by the Trust Act. This alternative would also consider, through future site planning studies and environmental analysis, the feasibility and scope of expanding the Crissy Field Marsh into Area B.

Like the No Action Alternative (GMPA 2000), there is potential for restoring historic views and creating positive visual changes with the removal of existing structures. In particular, the removal of Wherry housing to increase open space and restore critical habitat would open historic view corridors to and from the Presidio. However, new building heights would not block key views, and would be compatible with existing historic development. Further, scenic views would be restored, maintained, and enhanced. Also, under this alternative, implementation of the mitigation measures described under the Cultural Resources section would ensure that development would be compatible with the character of existing historic structures in the Presidio, and that the visual character of the Presidio would not be substantially altered.

Like the No Action Alternative (GMPA 2000), development under this alternative could introduce new light into the Presidio that could affect the character of the Presidio or day or nighttime views. New lighting fixtures would be shielded and use of mercury lights would be prohibited to ensure that adjacent properties, including residential and natural areas, are not adversely affected.

Cultural Destination Alternative

Under this alternative, open space, historic forest areas, and recreational opportunities would be expanded. The historic character and integrity of the NHLD would be protected while allowing changes that would maintain the park's vitality.

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Natural Resources

This alternative would allow more new (replacement) construction than the No Action Alternative (GMPA 2000). Like the No Action Alternative (GMPA 2000), Wherry housing would be removed under this alternative to enhance native plant habitat. Also under this alternative, new construction would be sited and designed to protect the character and integrity of the NHLD, and would be limited to the replacement of existing structures of similar size in existing areas of development, as provided by the Trust Act. This alternative differs from the No Action Alternative (GMPA 2000) in that housing in the South Hills Planning District would be removed to provide an additional 14 acres of landscaped area and 1 acre of native vegetation. This alternative would also include demolition beyond that in the No Action Alternative (GMPA 2000) in Fort Scott and the Main Post Planning Districts. Also under consideration for this alternative would be the feasibility and scope of expanding the Crissy Field Marsh into Area B, through future site planning studies and environmental analysis.

This alternative would have beneficial effects similar to the No Action Alternative (GMPA 2000) related to the removal of Wherry housing and the restoration of views from that area, as well as the restoration of the main parade ground. This alternative would also limit construction to the replacement of existing structures of similar size in already developed areas and ensure that new construction is sited and designed to protect the character and integrity of the NHLD. Landscaping or native plant restoration at these sites would provide additional open space in the South Hills Planning District, which would be a positive visual amenity.

A potentially negative visual effect of this alternative would be the increased amount of new construction when compared to the No Action Alternative (GMPA 2000), however, new building heights would not exceed those of existing adjacent buildings or key landscape features, which would ensure that new construction would not block key views. Also, this alternative would provide for the restoration, maintenance, and enhancement of views. Furthermore, implementation of the cultural resources mitigation measures described in Section 4.2 would ensure that development would be compatible with the character of existing historic structures in the Presidio and that the visual character of the Presidio would not be substantially altered.

Like the No Action Alternative (GMPA 2000), new construction under this alternative could introduce new light into the Presidio, which could affect the character of the Presidio or day or nighttime views. Because development intensity would be shifted to the northern portion of the Presidio, the increase in light would be more noticeable in the north, and there would be a corresponding reduction in light intensity in the south. New lighting fixtures would be shielded and use of mercury lights would be prohibited to ensure that adjacent areas are not adversely affected.

Minimum Management Alternative

Under the Minimum Management Alternative there would be no significant physical changes from existing conditions and no significant park enhancements would occur. Existing buildings would be rehabilitated and no new construction would occur. Therefore, there would be no potential for building design to be incompatible with the existing visual character of the Presidio. There would also be no demolition and therefore no reduction in built space and open space expansion as would occur under the No Action Alternative (GMPA 2000).

While the Minimum Management Alternative would not result in any changes to the Presidio that would change its character or result in the loss of historic views, neither would it result in the beneficial effects on views that would occur under the No Action Alternative (GMPA 2000). For example, Wherry housing would remain and the potential for the opening of historic views would be lost under this alternative. Only ecological restoration efforts that are currently underway would continue; historic and non-historic forest would be preserved and maintained in its present configuration. Restoration would not expand into new areas as identified in the VMP and native plant communities would not be expanded beyond the 70 acres currently occupied. Some historic views have been blocked by forests that have naturalized outside of historic forest boundaries. Without the ability to replace these naturalized forests with lower-growing, native species, the opportunity to restore these historic views would be lost.

There would be no new sources of light or glare and there would be no reduction in current lighting. Effects of light and glare would not change from existing conditions under this alternative.

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MITIGATION MEASURES

Adapted from the GMPA EIS Measures

The GMPA EIS does not include mitigation specific to visual resource impacts.

New Mitigation

Mitigation measures identified elsewhere in this document (specifically CR-5 through CR-6 and NR-1 and NR-7) would reduce visual resource impacts.

4.3.4 AIR QUALITY

METHODOLOGY

General Construction/Demolition Activities

Demolition and construction activities require use of heavy equipment, which would create fugitive dust particulate matter (PM₁₀ including PM_{2.5}), and emissions of other pollutants, such as nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), and reactive organic gases (ROG) from diesel fuel combustion. Construction emissions for individual projects would be intermittent and temporary and would occur on varying schedules and at varying levels of intensity; however, they could still cause adverse effects on local air quality.

The Bay Area Air Quality Management District (BAAQMD) has developed an analytical approach that obviates the need to quantitatively estimate these emissions (BAAQMD 1999). The BAAQMD recommends that a standard set of feasible PM₁₀ control measures be implemented for all construction activities. Because the BAAQMD has not designated PM_{2.5} management strategies, there are no specific recommendations for PM_{2.5}. Emissions of other contaminants (NO_x, CO, SO₂, and ROG) that would occur in the exhaust from heavy equipment are included in the regionwide inventory that is the basis for regional attainment and are not expected to impede attainment of maintenance of the ambient air quality standards. Demolition, renovation, or removal of asbestos containing building materials is subject to BAAQMD

Regulation 11, Rule 2. Through environmental review, permit compliance, and contracting processes, the Presidio Trust ensures that activities within its jurisdiction comply with such air quality rules. The BAAQMD recommended measures for dust control are shown in Table 35.

Consistency with Regional Clean Air Plans

The BAAQMD recommends use of specific criteria and methodologies for evaluating air quality impacts from implementation of plans (BAAQMD 1999). Conformity with the federally-mandated SIP is discussed in Chapter 5, Consultation and Coordination. The alternatives are evaluated for consistency with regional air quality plans and policies, specifically the 2000 Clean Air Plan (CAP), adopted December 20, 2000 (BAAQMD 2000). The consistency determination depends upon population growth, implementation of transportation control strategies, and planning for land use conflicts caused by sources of toxic air contaminants or odors. Quantification of future air pollutant emissions is not necessary to complete this analysis.

The CAP relies upon regionwide population growth projections to assess the emission inventory associated with regionwide transportation and energy demand, and is updated every 3 years. The basis for the population projections of the 2000 CAP is *Projections '98*, published by the Association of Bay Area Governments (ABAG). For the Presidio, *Projections '98* includes the housing and employment projections of the 1994 GMPA. Because population-based emissions from transportation and energy demand would vary proportionally with the housing and employment opportunities at the Presidio, any alternative providing housing or employment growth greater than that specified by the 1994 GMPA may be inconsistent with the assumptions used in the current 2000 CAP.

The CAP also relies upon implementation of transportation control measures (TCMs) by local jurisdictions. Although the Presidio is federally-managed land, to satisfy the general objectives of the GMPA in an environmentally responsible manner, the Trust has developed and is implementing TCMs to reduce air emissions from Presidio-related activities. The extent that each alternative would implement TCMs is reviewed. The CAP aims to minimize conflicts between land uses by prescribing adequate buffer zones to avoid

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Table 35: Feasible Control Measures for Construction Emissions of PM₁₀

Fugitive Dust Control	
Basic Control Measures (all construction sites)	<p>The following controls should be implemented at all construction sites.</p> <p>Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard.</p>
Enhanced Control Measures (sites greater than 4 acres)	<p>Water all active construction areas at least twice daily.</p> <p>Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.</p> <p>Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.</p> <p>Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.</p> <p>All "Basic" control measures listed above.</p>
Optional Control Measures (sites near sensitive receptors)	<p>Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).</p> <p>Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)</p> <p>Limit traffic speeds on unpaved roads to 15 mph.</p> <p>Install sandbags or other erosion control measures to prevent silt runoff to public roadways.</p> <p>Replant vegetation in disturbed areas as quickly as possible.</p> <p>Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.</p> <p>Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.</p> <p>Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.</p> <p>Limit the area subject to excavation, grading and other construction activity at any one time.</p>

Source: BAAQMD 1996.

impacts related to toxic air contaminants or odors. Uses that would be sensitive to odors or toxic air contaminants would include residences, lodging uses, and childcare facilities. The extent that each alternative would provide appropriate separation between sensitive uses and potential producers of odors or toxic air contaminants is reviewed.

Potential Localized CO Violations

Motor vehicle use causes emissions of carbon monoxide. These emissions can, under certain circumstances, build up near congested intersections where numerous vehicles idle and cause violations of the ambient air quality standards. In the San Francisco Bay Area Air Basin, CO levels have, in the past, caused violations. However, CO concentrations in the San Francisco Bay Area have not violated the standards since 1991, and the region is no longer classified as a nonattainment area for this pollutant. Provided that future localized CO concentrations do not exceed the standards, the regionwide effects of carbon monoxide emissions do not require analysis.

Analysis of future localized CO concentrations depends upon alternative-specific vehicle activity at intersections provided by the transportation analysis for this EIS. The Caltrans-approved dispersion model, CALINE4, is used with guidance from the BAAQMD (BAAQMD 1999) to estimate localized CO concentrations near heavily congested intersections.

Intersections operating at level of service (LOS) D or better are not normally expected to cause substantial CO buildup, because at these less congested intersections, the pollutant is better able to dissipate. At intersections operating at LOS E or F, carbon monoxide buildup is more likely, yet still uncommon. Detailed analysis is presented for select locations where project traffic (if more than an additional 100 vehicles per hour) would cause LOS to decline to D, E, or F. Poor future level of service or a substantial deterioration in performance induced by the alternatives are the considerations for selecting intersections.

Due to heavy highway traffic, potential violations in the year 2010 have been identified for certain locations in close proximity to either U. S. Highway 101 or U. S. Highway 1. Violations were predicted in the GMPA EIS at roadside

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locations along U. S. Highway 101 near the U. S. Highway 1 interchange and at the Golden Gate Bridge Toll Plaza, in Area A. No violations were projected for intersections internal to the Presidio Area B or in the surrounding neighborhoods. Because some of the alternatives would substantially affect future performance of intersections within the Presidio and the adjacent neighborhoods, the future localized CO concentrations could change. Table 36 shows the results of the analysis for localized CO concentrations.

Regional Emissions

Motor vehicle trips and stationary sources associated with development under the alternatives cause emissions of criteria pollutants ROG, NO_x, CO, and PM₁₀. Regional emissions caused by project-related traffic are estimated for each alternative using the BURDEN component of EMFAC2000, developed by the California Air Resources Board (CARB). The total vehicular emissions anticipated to occur in 2020 for the San Francisco subregion of the Bay Area are used as the basis for projecting the level of emissions that would be caused by each alternative, depending on the number of new vehicle trips related to the alternative. This takes into account the full range of vehicle trip types (e.g., home-work, home-commercial) and vehicle fleet composition (e.g., autos, buses, heavy trucks).

In the GMPA EIS, the total emissions of ROG, NO_x, and PM₁₀ due to mobile sources were found to be significant. Emissions related to the new vehicle trips generated by each of the alternatives are quantified in Table 37.

Each alternative would also result in emissions from the use of electricity and natural gas consumption. Future stationary and area sources that could be associated with the proposed uses in some alternatives would, in general, be minor and would not be likely to cause substantial emissions (examples of these sources would be heating facilities for housing, office, visitor services, and cultural/educational uses). These emissions would be a fraction of the emissions caused by project-related traffic. New stationary sources that might have more substantial emissions (e.g., independent power production facilities) would be subject to permitting requirements. Indirect emissions associated with electricity generation could also occur at plants that are outside of the San Francisco Bay Area Air Basin.

POTENTIAL IMPACTS

GENERAL CONSTRUCTION/DEMOLITION ACTIVITIES

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would result in approximately 1.12 million sf of demolished building space and 170,000 sf of replacement construction. Ongoing rehabilitation (with this alternative and all other alternatives) could also cause limited emissions, possibly requiring control. Mitigation measures calling for implementation of BAAQMD recommendations (Table 35) for construction and other ground disturbing activities and managing demolition activities would reduce this impact.

Final Plan Alternative

Moderate levels of demolition [approximately 1.07 million sf, or 95% of the No Action Alternative (GMPA 2000)] and a minimum level of new construction (approximately 710,000 sf, or about four times the amount of replacement construction that would occur under the No Action Alternative) would occur under this alternative over the life of the plan. This would be similar to, but more extensive, than activities that would occur under the No Action Alternative (GMPA 2000). Mitigation measures calling for implementation of BAAQMD recommendations would reduce this impact.

Final Plan Variant

Moderate levels of demolition [approximately 1.25 million sf, or 112% of the No Action Alternative (GMPA 2000)] and no new construction would occur under this alternative over the life of the plan. As a result, emissions generated by the Variant would be principally associated with proposed demolition and to a lesser extent building rehabilitation activities. Mitigation measures calling for implementation of BAAQMD recommendations would reduce this impact.

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Table 36: Predicted Localized CO Concentrations at Congested Intersections (ppm)

	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
1-Hour Average (ppm)							
Letterman/Presidio/Lincoln	4.0	4.2	4.1	4.2	4.2	4.2	4.2
Lombard/Presidio	4.2	4.3	4.2	4.3	4.4	4.3	4.4
Presidio/Pacific	4.2	4.2	4.2	4.2	4.3	4.2	4.2
Lyon/Lombard	4.0	4.1	4.0	4.1	4.1	4.1	4.1
14 th /Lake	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lincoln/25 th /El Camino del Mar	4.1	4.2	4.2	4.3	4.4	4.2	4.3
Lincoln/Merchant	4.1	4.1	4.1	4.2	4.2	4.1	4.1
Park Presidio/Lake	5.4	5.4	5.4	5.4	5.4	5.4	5.4
25 th /California	4.1	4.2	4.2	4.2	4.3	4.2	4.3
8-Hour Average (ppm)							
Letterman/Presidio/Lincoln	2.6	2.6	2.6	2.7	2.7	2.7	2.7
Lombard/Presidio	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Presidio/Pacific	2.6	2.7	2.6	2.7	2.7	2.7	2.7
Lyon/Lombard	2.6	2.6	2.6	2.6	2.6	2.6	2.7
14 th /Lake	2.5	2.6	2.5	2.5	2.6	2.6	2.6
Lincoln/25 th /El Camino del Mar	2.7	2.7	2.7	2.7	2.8	2.7	2.7
Lincoln/Merchant	2.6	2.6	2.6	2.7	2.7	2.6	2.6
Park Presidio/Lake	3.3	3.3	3.3	3.3	3.3	3.3	3.3
25 th /California	2.7	2.7	2.7	2.7	2.7	2.7	2.7

Source: EIP Associates, 2001.

Notes:

The California ambient air quality standards are 20 ppm (1-hr) and 9 ppm (8-hr). The national standards are 35 ppm (1-hr) and 9 ppm (8-hr). Concentration are based on CALINE4 output which are adjusted with future anticipated background CO concentrations of 3.5 ppm (1-hr) and 2.3 ppm (8-hr).

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Table 37: Estimated Average Weekday Emissions from Vehicle Trips

Pollutant	GMPA 2000 (lb/day)	Final Plan (lb/day)	Final Plan Variant	Resource Consolidation (lb/day)	Sustainable Community (lb/day)	Cultural Destination (lb/day)	Minimum Management (lb/day)
Average Weekday Vehicle Trips	33,822	44,407	36,451	44,204	50,331	47,999	49,519
Reactive Organic Gases (ROG)	175	230	189	229	260	248	256
Nitrogen Oxides (NO _x)	339	445	365	443	505	481	497
Carbon Monoxide (CO)	1,063	1,396	1,146	1,389	1,582	1,508	1,556
Particulate Matter (PM ₁₀)	16	21	17	20	23	22	23
Compared to GMPA 2000							
Net New Average							
Weekday Vehicle Trips	0	10,585	2,629	10,382	16,509	14,177	15,697
Reactive Organic Gases (ROG)	0	55	14	54	85	73	81
Nitrogen Oxides (NO _x)	0	106	26	104	166	142	157
Carbon Monoxide (CO)	0	333	83	326	519	446	493
Particulate Matter (PM ₁₀)	0	5	1	5	8	7	7

Source: EIP Associates, 2001

Notes:

Emission estimates based on use of the CARB EMFAC2000 model for the San Francisco Subregion.

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Resource Consolidation Alternative

A maximum level of demolition [approximately 1.91 million sf, or 170% of the No Action Alternative (GMPA 2000)] and moderate levels of new construction (approximately 1.25 million sf, or roughly seven times the amount of replacement construction that would occur under the No Action Alternative) would occur under this alternative over the life of the plan. This would be more intense than similar activities under the No Action Alternative (GMPA 2000). Mitigation would reduce this impact through implementation of BAAQMD recommendations.

Sustainable Community Alternative

A minimum level of demolition [approximately 890,000 sf, or 80% of the No Action Alternative (GMPA 2000)] and a minimum level of new construction [approximately 620,000 sf, or 3.6 times the amount of replacement construction that would occur under No Action Alternative (GMPA 2000)] would occur under this alternative over the life of the plan. This would be similar to the No Action Alternative (GMPA 2000). As with other alternatives, BAAQMD recommendations would reduce this impact.

Cultural Destination Alternative

Moderate levels of demolition [approximately 1.37 million sf, or 120% of the No Action Alternative (GMPA 2000)] and moderate levels of new construction (approximately 1.37 million sf, or eight times the amount of replacement construction that would occur under No Action Alternative) would occur under this alternative over the life of the plan. This level of activity would be more intense than under the No Action Alternative (GMPA 2000). BAAQMD recommendations would reduce this impact.

Minimum Management Alternative

No demolition or new construction would be associated with this alternative. Rehabilitation would cause only limited emissions.

CONSISTENCY WITH REGIONAL CLEAN AIR PLANS

No Action Alternative (GMPA 2000)

The 2000 CAP accounts for the adopted GMPA, which projected about 2,000 residents and 4,800 new jobs at the Presidio by 2010 (pages 160 and 167 of EIS in GMPA). (Note that the alternatives analysis in this EIS are for the year 2020). Should housing and employment growth occurring under the No Action Alternative (GMPA 2000) outpace the GMPA, emissions from regionwide transportation and energy demand would exceed those already considered in the CAP. Some facilities would be demolished under this alternative that would not be replaced. As a result, buildup of the No Action Alternative (GMPA 2000) would provide for about 1,660 residents and 6,460 employees. Because job growth could outpace the projections in the adopted GMPA, the emissions attributable to growth at the Presidio could be inconsistent with those assumed in the 2000 CAP. Consequently, attainment of the ambient air quality standards in the region may be delayed. However, future CAP revisions (anticipated to occur in 2003) would incorporate the growth anticipated under this alternative.

Along with the above growth analysis, the CAP relies on jurisdictions implementing certain transportation demand and land use management measures. The Presidio Trust Transportation Demand Management Program would implement the TCMs of the CAP. In addition the PTMP would coordinate land uses to provide buffer zones and avoid conflicts from toxic contaminants or odors. Therefore, these aspects of the alternative would be consistent with the CAP.

Final Plan Alternative

Housing and employment growth under this alternative (about 3,770 residents and 6,890 employees) could induce emissions from transportation and energy demand that would be inconsistent with the assumptions of the CAP. Similar to the No Action Alternative (GMPA 2000), future CAP revisions (anticipated to occur in 2003) would incorporate the long-term growth anticipated to occur through 2020 under this alternative. Also similar to the No Action Alternative (GMPA 2000), this alternative would coordinate land uses to avoid conflicts

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due to odors and toxic air contaminants and would implement TCMs contained in the CAP.

Final Plan Variant

Housing and employment growth related to this alternative (about 2,630 residents and 6,630 employees) could induce emissions that would be inconsistent with the assumptions of the CAP. However, future CAP revisions (anticipated to occur in 2003) would incorporate the growth anticipated to occur through 2020 under this alternative. In addition, this alternative would coordinate land uses to avoid conflicts due to odors and toxic air contaminants and would implement TCMs contained in the CAP.

Resource Consolidation Alternative

Housing and employment growth related to this alternative (about 2,230 residents and 8,480 employees) could induce emissions that would be inconsistent with the assumptions of the CAP. However, future CAP revisions (anticipated to occur in 2003) would incorporate the growth anticipated to occur through 2020 under this alternative. In addition, this alternative would coordinate land uses to avoid conflicts due to odors and toxic air contaminants and would implement TCMs contained in the CAP.

Sustainable Community Alternative

Housing and employment growth related to this alternative (about 3,330 residents and 7,520 employees) could induce emissions that would be inconsistent with the assumptions of the CAP. However, future CAP revisions (anticipated to occur in 2003) would incorporate the growth anticipated to occur through 2020 under this alternative. In addition, this alternative would coordinate land uses to avoid conflicts due to odors and toxic air contaminants and would implement TCMs contained in the CAP.

Cultural Destination Alternative

Housing and employment growth under the Cultural Destination Alternative (about 3,990 residents and 7,840 employees) could induce emissions that would be inconsistent with those assumed in the CAP. However, future CAP

revisions (anticipated to occur in 2003) would incorporate the growth anticipated to occur through 2020 under this alternative. In addition, this alternative would coordinate land uses to avoid conflicts due to odors and toxic air contaminants and would implement TCMs contained in the CAP.

Minimum Management Alternative

Housing and employment growth under the Minimum Management Alternative (about 3,600 residents and 7,820 employees) could induce emissions that would be inconsistent with the assumptions of the CAP. As with the No Action Alternative (GMPA 2000) future CAP revisions (anticipated to occur in 2003) would incorporate the growth anticipated to occur through 2020 under this alternative.

POTENTIAL LOCALIZED CO VIOLATIONS

No Action Alternative (GMPA 2000)

As shown in Table 36, future CO concentrations under this alternative would range up to 5.4 parts per million (ppm) for the 1-hour average and 3.3 ppm for the 8-hour average where Presidio traffic connects with traffic on the regional highway system. At all locations, future CO concentrations do not exceed the ambient air quality standards. Under this alternative, the Trust Transportation Demand Management (TDM) program would further reduce CO emissions.

All Remaining Alternatives

Please refer to the discussion under the No Action Alternative (GMPA 2000) and Table 36.

REGIONAL EMISSIONS

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would generate approximately 33,800 internal and external daily vehicle trips in 2020. At that time, these trips would cause about 175 lbs/day of ROG and 339 lbs/day of NO_x. TCMs would be implemented by the Trust through the TDM program to reduce the

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number and length of vehicle trips. The effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP as described above.

Final Plan Alternative

The Final Plan Alternative would generate up to 44,400 daily vehicle trips, about 10,600 trips more than the No Action Alternative (GMPA 2000). The increased emissions of NO_x and ROG from motor vehicle trips would be substantially above levels that would occur with the No Action Alternative (GMPA 2000) (106 lbs/day more of NO_x and 55 lbs/day of ROG). As with the No Action Alternative (GMPA 2000), TCMs in the TDM program would reduce trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

Final Plan Variant

The Final Plan Variant would generate up to 36,500 daily vehicle trips, about 2,600 more trips than the No Action Alternative (GMPA 2000). The increased motor vehicle trips would not substantially increase regional emissions of ROG or NO_x above those that would occur with the No Action Alternative (GMPA 2000). As with the No Action Alternative, TCMs in the TDM program would be implemented to reduce air emissions from vehicle trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

Resource Consolidation Alternative

The Resource Consolidation Alternative would generate up to 44,200 daily vehicle trips, about 10,400 more trips than the No Action Alternative (GMPA 2000). The increased motor vehicle trips would substantially increase regional emissions of NO_x, and ROG when compared to the No Action Alternative (GMPA 2000) (up to 104 lbs/day more of NO_x and 54 lbs/day of ROG). As with the No Action Alternative (GMPA 2000), TCMs in the TDM program would be implemented to reduce air emissions from vehicle trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

Sustainable Community Alternative

The Sustainable Community Alternative would generate up to 50,300 daily vehicle trips, about 16,500 trips more than the No Action Alternative (GMPA 2000). The increased motor vehicle trips would substantially increase regional emissions of ROG and NO_x [up to 85 lbs/day of ROG and 166 lbs/day of NO_x more than the No Action Alternative (GMPA 2000)]. As with the No Action Alternative (GMPA 2000), TCMs and TDM measures would reduce air emissions from vehicle trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

Cultural Destination Alternative

The Cultural Destination Alternative would generate up to approximately 48,000 daily vehicle trips. Compared to the No Action Alternative (GMPA 2000), net new trips would be 14,200. The increased motor vehicle trips would cause a substantial increase in regional emissions of NO_x [142 lbs/day more] and ROG [73 lbs/day more] than the No Action Alternative (GMPA 2000)]. As with the No Action Alternative (GMPA 2000), implementation of TCMs and TDM measures would reduce air emissions from vehicle trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

Minimum Management Alternative

The Minimum Management Alternative would generate approximately 49,500 vehicle trips per day. Compared to the No Action Alternative (GMPA 2000), approximately 15,700 net new trips would occur under this alternative. This would substantially increase ROG and NO_x emissions by 81 and 157 lbs/day respectively over the No Action Alternative (GMPA 2000). As with the No Action Alternative (GMPA 2000), TCMs would reduce air emissions from vehicle trips, and the effects of the emissions would be adequately reduced by maintaining consistency with the regional CAP.

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MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The following measures are updated from the mitigation specified in the GMPA EIS to be consistent with the recommendations of the BAAQMD for construction. These measures would apply to all alternatives except Minimum Management.

NR-20 Basic Control Measures. To reduce construction-generated particulate matter (PM_{10}) emissions, construction contractors would implement as appropriate the BAAQMD's recommended control measures for emissions of dust during construction (see Table 35). Basic control measures are: (1) water all active construction areas at least twice daily; (2) cover all trucks hauling soil, sand, and other loose materials or require trucks to maintain at least 2 feet of freeboard; (3) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas; (4) sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas; and (5) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

NR-21 Transportation Control Measures (TCMs). The Presidio Trust Transportation Demand Management Program would implement the TCMs of the 2000 CAP to minimize air emissions from Presidio-related activities. In addition consistent with the 2000 CAP, the Trust would coordinate land uses to provide buffer zones and avoid conflicts from toxic contaminants or odors.

New Mitigation

NR-22 Deconstruction/Demolition Techniques. To the extent feasible, the Trust would apply an environmentally effective approach, including a combination of deconstruction and demolition techniques, to remove outdated structures and to reduce PM_{10} emissions from demolition activities.

4.3.5 NOISE

METHODOLOGY

Three major categories of noise are analyzed in this section: noise related to demolition and construction activities, noise from traffic throughout the Presidio, and noise from miscellaneous stationary sources or special events. The strategies used for noise control in the Presidio depend on the source of the noise. Local noise control for neighborhood surrounding the Presidio is provided through the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1994). Traffic and highway noise, and measures of effects on noise-sensitive lands within the Presidio, are characterized using Federal Highway Administration criteria, as shown in Table 7 of the Natural Resources, Affected Environment Chapter.

General Construction/Demolition Noise

Demolition and construction activities would create intermittent impacts on the noise environment. This noise could at times be distinctive and disruptive of the natural noise environment of the Presidio. The impacts on land uses within the Presidio and in the nearby neighborhoods would vary widely according to the type of construction methods and equipment used as various components of each alternative are constructed. The sensitivity of the area or user experiencing the noise, and the distance between reception and noise source would also influence the perceived severity of noise.

Although the exact nature and schedule of demolition and construction activities associated with implementation of any alternative cannot be predicted at this time, it is foreseeable that demolition, grading, excavation, building fabrication and finishing, and associated truck traffic would occur. Demolition activities could include mechanical wrecking or deconstruction techniques and concrete crushing. Construction could also require use of impact tools such as pile drivers. At any one location, the effects of noise from demolition or construction would be short-term for the specific proposal being implemented. Typical noise levels from construction equipment would be between approximately 75 dBA and 100 dBA measured 50 feet from the source, depending primarily on the type of equipment (NPS 1994).

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The analysis of the potential impacts of demolition or construction noise relies on a comparison of the anticipated effects of each alternative with the limitations of the San Francisco Noise Ordinance. The ordinance limits construction noise during daytime hours to 80 dBA at 100 feet and during nighttime hours to five dBA above the ambient noise levels at the property line. This method of analysis is consistent with the approach used in the GMPA EIS.

Short-term construction activities, impact tool use, and demolition activities could be disruptive to park users and other people within close proximity of the activity. As determined in the GMPA EIS, erecting barriers around construction equipment and restricting access to construction sites would reduce noise impacts, but not to a level of insignificance to those closest to (i.e., within 250 feet) construction equipment (NPS 1994). Presidio tenants, recreational users, and certain residences within the city of San Francisco could experience significant impacts if the physical constraints of a particular site preclude provision of suitable buffer distance. In certain circumstances, restricting access within a 250-foot radius of all construction activities may not be possible. Examples of these circumstances are:

- where repair of infrastructure would occur near occupied buildings or noise sensitive areas (see Figure 25, Natural Resources, Affected Environment chapter);
- where rehabilitation work would occur at buildings adjacent to occupied uses; or
- where rehabilitation of stream drainages or habitat would occur near noise sensitive areas.

These effects were characterized in the GMPA EIS. Measures adapted from the GMPA EIS are included below with appropriate modifications. Additional mitigation is identified as warranted.

Traffic Noise

This impact addresses the dual circumstances of new development to either generate traffic that would cause increased noise, or place residences or other new sensitive uses in areas of the Presidio experiencing unacceptable noise from traffic. Traffic on the major highways and internal roadways of the

Presidio is the primary existing source of noise, and under each alternative it is anticipated to gradually increase compared to existing conditions. New traffic noise could affect noise sensitive areas of the Presidio (see Figure 25, Natural Resources, Affected Environment Chapter) and noise sensitive residences within the City of San Francisco.

The analysis of traffic noise impacts relies on a comparison of observed and modeled noise levels at locations where substantial traffic changes are expected to be induced by an alternative. For roadways internal to the Presidio and near noise sensitive areas, traffic volumes that would occur under each alternative were compared to determine if the alternative would cause a noticeable noise increase. To assess effects in the City of San Francisco near the Presidio gates, peak hour noise levels for each alternative are estimated for each gate. Future noise levels are predicted by using California reference vehicle noise levels and a Caltrans noise propagation model (Caltrans 1998). The results are shown in Table 38. If any alternative would cause noticeable traffic noise increases at any noise sensitive area (beyond those anticipated under the GMPA), the impact is identified and evaluated for significance.

Significance of impacts depends on the existing conditions. At some locations throughout the Presidio, existing noise conditions are known to approach or exceed the Noise Abatement Criteria (NAC) established by the Federal Highway Administration (FHWA) (see Table 7, Natural Resources, Affected Environment chapter). The GMPA EIS initially identified these areas (page 211, Final EIS), and the short-term noise measurements presented in Table 8 of the Natural Environment, Affected Environment chapter generally confirm the earlier findings. For locations experiencing noise that approaches or exceeds the FHWA NAC, a noticeable (greater than 3 dBA) noise increase caused by an alternative would warrant new mitigation for traffic noise.

The GMPA EIS (page 211, Final EIS) identified various locations internal to the Presidio where GMPA development would induce noise increases that would be above background levels, but would not be substantial. Examples of locations expected to experience increased noise from traffic internal to the Presidio are the areas along Lincoln Boulevard, Lombard Street, and Presidio Boulevard, and the San Francisco National Cemetery, Presidio Golf Course, Lobos Creek Valley, and forested areas used for passive recreation.

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Table 38: Traffic Noise Levels In Vicinity of Presidio Gates by Alternative (dBA)

Location	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Development	Cultural Destination	Minimum Management
2020 PM Peak Hour L_{eq}(h)							
Mason St.	64.2	66.2	64.9	66.8	66.9	66.6	66.4
Gorgas Ave.	60.2	60.5	60.4	60.8	60.5	60.5	60.4
Lombard St.	67.0	67.7	67.4	67.7	68.2	67.7	68.2
Presidio Ave.	68.9	69.3	68.9	69.3	69.6	69.4	69.4
Arguello Blvd.	66.2	66.2	66.2	68.0	69.0	66.2	66.2
15th Ave.	60.8	64.5	62.1	55.3	62.5	64.3	64.4
Lincoln Blvd./25 th Ave.	68.0	68.5	68.6	69.2	69.4	68.3	69.0
Plaza West	62.2	62.2	62.2	64.5	64.5	62.2	62.2
Plaza East	67.4	67.4	67.4	67.4	67.4	67.4	67.4
Doyle Drive	64.7	65.6	64.8	61.8	67.1	66.0	65.7
Compared to No Action (GMPA 2000)							
Mason St.	-	2.0	0.7	2.6	2.7	2.4	2.2
Gorgas Ave.	-	0.3	0.2	0.6	0.3	0.3	-
Lombard St.	-	0.8	0.4	0.7	1.3	0.8	1.2
Presidio Ave.	-	0.4	-	0.4	0.7	0.5	0.5
Arguello Blvd.	-	-	-	1.8	2.8	-	-
15th Ave.	-	3.7	1.3	-5.5	1.7	3.5	3.6
Lincoln Blvd./25 th Ave.	-	0.4	0.5	1.1	1.4	0.2	1.0
Plaza West	-	-	-	2.3	2.3	-	-
Plaza East	-	-	-	-	-	-	-
Doyle Drive	-	0.9	-	-2.9	2.4	1.3	1.0

Source: EIP Associates, 2001.

Notes:

Traffic noise levels in terms of L_{eq}(h) for 2020 p.m. peak hour traffic at 50 feet from the centerline of the roadway at the gate. Includes all pass-through traffic, inbound and outbound.

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The GMPA EIS also identified the following districts where potential future development within the Presidio could be exposed to highway noise above the FHWA NAC:

- East Washington Housing and Kobhe Avenue Housing along Highway 1;
- PHSR residences along Park Presidio;
- Fort Scott housing along U. S. Highway 1 and north of U. S. Highway 101 (this includes Storey Avenue and Armistead Road Housing);
- Religious Activities Center (building #682);
- Mountain Lake Park along Park Presidio and U. S. Highway 1;
- Riley Avenue Housing along U. S. Highway 101;
- Letterman Planning District;
- Main Post offices on Montgomery Street along U. S. Highway 101;
- Main Post PX/Commissary;
- Harmon Hall (building #649);
- San Francisco National Cemetery along U. S. Highway 101;
- World War II Memorial; and
- Office uses at the west end of Crissy Field.

The short-term noise measurements presented in Table 8 of the Natural Resources, Affected Environment Chapter indicate that the following locations outside Presidio gates have existing traffic noise levels approaching or exceeding the FHWA NAC:

- City residences on Marina Boulevard near Lyon Street and Doyle Drive;
- City residences on Lyon Street at Francisco Street and Richardson Avenue;
- City residences on Presidio Avenue; and
- City residences on Lincoln Boulevard at El Camino del Mar and 25th Avenue.

Current Trust practices are intended to respond to existing excessive noise conditions when appropriate. To protect new development from unacceptable exterior noise environments, as discussed in the Affected Environment Chapter, new multi family residential units (lodging, apartments, or other attached dwellings) within the Presidio would be constructed according to standards equivalent to Title 24 of the California Code of Regulations.

Implementation of these standards would provide suitable insulation to protect dwelling interiors from excessive exterior noise. If current practices and adapted GMPA EIS measures modified to apply to the PTMP would not be sufficient to protect noise sensitive areas from new traffic noise, additional mitigation is identified.

Noise from Stationary Sources or Special Events

Stationary, or fixed, sources of noise could be located in almost any developed area of the Presidio at any given time. Ongoing activities that could require either short- or long-term use of stationary noise sources (e.g., mechanical equipment, landscaping equipment, electrical transformer systems, loading dock operations) include operation and/or maintenance of Presidio buildings, landscaping, and other infrastructure. Similar to the effects that would be caused by construction-related noise sources, the exact nature of stationary noise sources that would be associated cannot be predicted at this time. However, it is foreseeable that under any alternative, increased noise from building heating and ventilation equipment, site landscaping maintenance, and trash and freight loading would occur around newly occupied uses.

Analysis of stationary-source noise impacts is based on a programmatic review of the proposed uses, the surrounding noise-sensitive areas likely to be affected, and the potential ability of the proposed uses to be designed and operated in a manner that would avoid noise conflicts. The comparison is based on the limitations of the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1994), which generally specifies that noise exceeding ambient noise levels by 5 dBA or more at the property line would be considered excessive. The GMPA EIS (page 212 Final EIS) noted that the future noise levels within the Presidio would increase due to the future development, but they would not violate the limits of the San Francisco Noise Ordinance. As such, the GMPA EIS did not identify mitigation measures for stationary sources. If current practices would not be sufficient to protect noise-sensitive areas from noise related to foreseeable stationary sources, additional mitigation is identified.

Additional stationary noise sources could be associated with special events that would be held periodically at suitable locales, for limited durations. The majority of these special events are expected to be smaller outdoor seminars,

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lectures, festivals, exhibits, demonstrations, or hands-on participation that would have limited or no substantial noise effects. As with the noise effects from stationary sources discussed above, if current practices would not be sufficient to reduce noise from foreseeable special events, additional mitigation is identified.

POTENTIAL IMPACTS

GENERAL CONSTRUCTION/DEMOLITION NOISE

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would involve the demolition of Wherry housing, a portion of the PSH, and other existing structures, along with construction of approximately 170,000 sf of replacement uses over the life of the plan. For various construction activities, composite noise levels for overlapping operation of multiple pieces of equipment were identified. Noise levels would be attenuated by distance such that for activities occurring more than 250 feet from receptors would not be expected to exceed 80 dBA. Noise impacts on Presidio tenants, recreational users, and residents could be reduced to below 80 dBA by restricting access within 250 feet. Certain activities would be limited to daytime hours to minimize disruption. Furthermore, additional analysis would be conducted before initiating projects such as the rehabilitation of stream drainages along Tennessee Hollow and Lobos Creek or reconstruction of Doyle Drive (NPS 1994).

Strategies adapted from the GMPA EIS to require compliance with the San Francisco Noise Ordinance (e.g., construction of barriers around active sites and equipment, closure of certain sites during construction) would reduce construction and demolition noise (refer to mitigation measures presented at the end of this section).

Final Plan Alternative

This alternative would have similar potential to disrupt Presidio tenants, recreational users, and residences within the City of San Francisco as the No Action Alternative (GMPA 2000), due to demolition activities, and greater

potential for construction-related disturbances. Strategies adapted from the GMPA EIS would reduce construction and demolition noise.

Final Plan Variant

Demolition activities under this alternative would have similar potential to disrupt Presidio tenants, recreational users, and residences within the City of San Francisco as the Final Plan Alternative. However, because no new construction would occur, this alternative would eliminate potential disruptions that could be caused by construction noise. Strategies adapted from the GMPA EIS would reduce demolition noise.

Resource Consolidation Alternative

This alternative would have greater potential than the No Action Alternative (GMPA 2000) to disrupt Presidio tenants, recreational users, and residences within the City of San Francisco, because the levels of demolition and new construction would be greater than under the No Action Alternative (GMPA 2000). Strategies adapted from the GMPA EIS would reduce construction and demolition noise.

Sustainable Community Alternative

This alternative would have similar potential to disrupt Presidio tenants, recreational users, and residences within the City of San Francisco as the No Action Alternative (GMPA 2000) because the levels of development would be similar to those that would occur under the No Action Alternative (GMPA 2000). Compared to the No Action Alternative, demolition noise associated with removal of PSH wings would not occur, and increased construction noise internal to the Presidio in the areas around the Main Post and East Housing would occur. Strategies adapted from the GMPA EIS would reduce construction and demolition noise.

Cultural Destination Alternative

This alternative would have greater potential to disrupt Presidio tenants, recreational users, and residences within the City of San Francisco because the levels of demolition and new construction would be greater than under the No

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Action Alternative (GMPA 2000). Strategies adapted from the GMPA EIS would reduce construction and demolition noise.

Minimum Management Alternative

No new construction or demolition would occur under the Minimum Management Alternative. No substantial construction noise would occur from rehabilitation activities that would continue under this alternative.

TRAFFIC NOISE

With all alternatives, certain locations where existing noise conditions are known to approach or exceed the FHWA NAC (see Table 7, Natural Resources, Affected Environment chapter) would continue to experience adverse traffic noise without additional mitigation measures. Noise levels associated with traffic volume increases that would occur at Presidio gates are summarized in Table 38. Where substantial increases in traffic noise are anticipated to occur additional mitigation is identified.

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would provide for a net reduction in the amount of built space at the Presidio. Nonetheless, as vacant buildings are occupied, additional vehicle trips would be generated and associated traffic noise would increase over time. As shown in the bulleted list under the methodology section (see "Traffic Noise"), several locations within and adjacent to the Presidio would experience noise levels that exceed the FHWA NAC. Implementation of mitigation to address vehicle noise reduction would be adequate for managing traffic noise.

Final Plan Alternative

Like the No Action Alternative, there would be an overall net reduction in built space at the Presidio; however, there would be an increase in projected vehicle trips and associated traffic noise. Certain sensitive areas within the Presidio would be adversely affected by traffic volume increases, which would increase noise levels above those expected under the No Action Alternative (GMPA 2000). This increase in traffic noise would be noticeable

(greater than 3 dBA) at the following on-site locations which are already projected to exceed NAC under the No Action Alternative (GMPA 2000):

- Riley Avenue Housing nearest to Sheridan (FHWA Noise Category C),
- Portion of San Francisco National Cemetery nearest Park and Lincoln (FHWA Noise Category A), and
- World War II Memorial on Kobbe at Lincoln (FHWA Noise Category A).

Compared to the conditions that would occur under the No Action Alternative (GMPA 2000), no off-site (City) locations would experience noticeable traffic noise increases except for locations near the PSH. However, on 14th and 15th Avenues, the future traffic caused by this alternative would not cause noise levels approaching or exceeding the NAC, so the impact would be less than significant.

Rehabilitation of Riley Avenue Housing would conform to current practice of meeting standards equivalent to Title 24, which would provide an acceptable interior noise environment. Implementation of measures calling for periodically monitoring and mitigating traffic noise at the San Francisco National Cemetery and the World War II Memorial would ensure that noise levels are acceptable at sensitive sites. This measure specifies future analysis of noise management strategies (e.g., sound barriers or berms, vehicle restrictions, traffic calming) in an effort to maintain future noise levels below the NAC.

Final Plan Variant

The Final Plan Variant would create no new construction in any of the planning areas. However, noise from traffic increases would have a limited affect on certain sensitive areas within the Presidio above those expected under the No Action Alternative (GMPA 2000). This increase would be noticeable (greater than 3 dBA) at the following on-site locations which are already projected to exceed NAC under the No Action Alternative:

- Riley Avenue Housing nearest to Sheridan (FHWA Noise Category C), and

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- World War II Memorial on Kobbe at Lincoln (FHWA Noise Category A).

Compared to the conditions that would occur under the No Action Alternative (GMPA 2000), no off-site (City) locations would experience noticeable (greater than 3 dBA) traffic noise increases.

Rehabilitation of Riley Avenue Housing would conform to current practice of meeting standards equivalent to Title 24, which would provide an acceptable interior noise environment. Additionally, periodic monitoring of traffic noise levels to protect the World War II Memorial would ensure that noise levels are acceptable.

Resource Consolidation Alternative

The Resource Consolidation Alternative would increase land uses at Fort Scott, Crissy Field, and Letterman Planning Districts, so traffic noise would tend to increase in the northern half of the Presidio.

Certain sensitive areas within the Presidio would be adversely affected by traffic volume increases that would occur on the internal road network beyond those expected under the No Action Alternative (GMPA 2000). This increase would be noticeable (greater than 3 dBA) at the following on-site locations which are already projected to exceed NAC under the No Action Alternative:

- Riley Avenue Housing nearest to Sheridan (FHWA Noise Category C), and
- World War II Memorial on Kobbe at Lincoln (FHWA Noise Category A).

Compared to the conditions that would occur under the No Action Alternative (GMPA 2000), no City locations would experience noticeable (greater than 3 dBA) traffic noise increases.

Rehabilitation of Riley Avenue Housing would conform to current practice of meeting standards equivalent to Title 24, which would provide an acceptable interior noise environment. Additionally, periodic monitoring of traffic noise

levels to protect the World War II Memorial would ensure that noise levels are acceptable.

Sustainable Community Alternative

The Sustainable Community Alternative land uses would largely follow the patterns of the No Action Alternative (GMPA 2000) and traffic noise would tend to be distributed similarly.

Certain sensitive areas within the Presidio would be adversely affected by traffic volume increases that would occur on the internal road network under this alternative. This increase would be noticeable (greater than 3 dBA) at the following on-site locations which are already projected to exceed NAC under the No Action Alternative:

- Riley Avenue Housing nearest to Sheridan (FHWA Noise Category C),
- Portion of San Francisco National Cemetery nearest Park and Lincoln (FHWA Noise Category A), and
- World War II Memorial on Kobbe at Lincoln (FHWA Noise Category A).

Compared to the conditions that would occur under the No Action Alternative (GMPA 2000), the following additional locations could experience traffic noise increases: Baker Beach Housing and Infantry Terrace Housing within the Presidio nearest to Lincoln or Arguello Boulevards, respectively, City locations near Arguello Gate, and Inspiration Point. Because the noise increases at each of these locations would not exceed 3 dBA (e.g., a noticeable change), the impact would be less than significant.

Rehabilitation of Riley Avenue Housing would conform to current practice of meeting standards equivalent to Title 24, which would provide an acceptable interior noise environment. Additionally, periodic monitoring of traffic noise levels, and instituting measures to protect the San Francisco National Cemetery and the World War II Memorial would ensure that noise levels are acceptable.

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Cultural Destination Alternative

The Cultural Destination Alternative would include increased use at Fort Scott, PSH, Crissy Field, and Letterman Planning Districts, so traffic noise would tend to increase in the northern half of the Presidio. This increase would be noticeable (greater than 3 dBA) at the following on-site locations which are already projected to exceed NAC under the No Action Alternative:

- Riley Avenue Housing nearest to Sheridan (FHWA Noise Category C), and
- Portion of San Francisco National Cemetery nearest Park and Lincoln (FHWA Noise Category A).

Compared to the conditions that would occur under the No Action Alternative (GMPA 2000), no off-site (City) locations would experience noticeable (greater than 3 dBA) traffic noise level increases except for locations near the PSH. However, on 14th and 15th Avenues, the future traffic caused by this alternative would not cause noise levels approaching or exceeding the NAC, so the impact would be less than significant.

Rehabilitation of Riley Avenue housing would conform to current practice of meeting standards equivalent to Title 24. This would provide a suitable interior noise environment for occupants of the Riley Avenue housing. Periodic monitoring of traffic noise levels, and instituting measures to protect the San Francisco National Cemetery and the World War II Memorial would ensure that noise levels are acceptable.

Minimum Management Alternative

Under the Minimum Management Alternative, existing buildings would be rehabilitated and reused. No building demolition would occur and thus there would not be a reduction in the amount of built space at the Presidio (which would occur under all other alternatives except Cultural Destination). This would tend to increase traffic noise throughout the entire Presidio when compared to the No Action Alternative (GMPA 2000). Traffic noise increases would occur at certain sensitive areas within the Presidio (e.g., the San Francisco National Cemetery, the World War II Memorial) and mitigation would be implemented to appropriately protect these sensitive uses. Noise

within the adjacent neighborhoods would also increase; however, the resulting noise levels would not exceed NAC or noticeably increase above those that would occur under the No Action Alternative (GMPA 2000).

NOISE FROM STATIONARY SOURCES OR SPECIAL EVENTS

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would involve development of new uses that would generate increased noise from sources such as building operations equipment and increased human activity. For example, heating and ventilation systems would generate a steady level of low-level noise, and the population visiting, working, and living at the uses within the Presidio would generate more noise from human activity. Additionally, for limited durations, special events could occur outdoors that would cause focused human activity and possibly use of portable public address systems to amplify voices or music. This alternative (or any other alternative) would not include major stationary sources of noise or major sound amplification systems for outdoor special events. The resulting noise levels would not exceed the limitations of the San Francisco Noise Ordinance.

All Remaining Alternatives

Noise from stationary sources and special events would be comparable under all of the remaining alternatives. Please refer to the discussion above for the No Action Alternative (GMPA 2000).

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The following GMPA EIS measures are recommended to protect areas of the Presidio and the adjacent neighborhoods from construction and traffic noise.

NR-23 General Construction/Demolition Noise. During construction, contractors and other equipment operators would be required to comply with the San Francisco Noise Ordinance (San Francisco Municipal Code, Section

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2907b), which requires that each piece of powered equipment, other than impact tools, emit noise levels of not more than 80 A-weighted decibels (dBA) at 100 feet. To reduce noise impacts, barriers would be erected around construction sites and stationary equipment such as compressors; this would reduce noise by as much as 5 dBA. To further reduce noise impacts on visitors, some construction sites would be temporarily closed, and appropriate barriers placed at a distance of 250 feet from the sites.

NR-24 *Traffic Noise Reduction.* Vehicle traffic throughout the Presidio represents the major source of existing and future noise, especially from U. S. Highways 101 and 1. Although the Trust cannot control the level of noise produced by privately owned vehicles, it can control which types of transit vehicles are used at the Presidio. The Trust would use and encourage other city and transit providers to select transit vehicles that produce less noise pollution. Energy-conserving government vehicles would be used by maintenance and other divisions. If possible, electric or other alternative vehicles would be used to reduce noise levels.

New Mitigation

The following measure would apply to all alternatives except No Action Alternative (GMPA 2000) and Minimum Management.

NR-25 *Traffic Noise Monitoring and Attenuation.* Noise levels would be periodically monitored at the San Francisco National Cemetery and the World War II Memorial. Noise attenuation measures would be instituted, if feasible, if noise levels exceed the Noise Abatement Criteria standards. Examples of attenuation measures include sound barriers or berms, vehicle restrictions, and traffic calming.

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4.4 THE COMMUNITY

This section evaluates potential impacts of the alternatives on land use, socioeconomic issues/housing supply, schools, visitor experience/interpretation and education, recreation, and public safety.

4.4.1 LAND USE

METHODOLOGY

This analysis involved identifying current land uses at the Presidio, as well as current land uses in the surrounding community and in Area A. Proposed changes in building and land uses were compared to existing uses to determine the potential for incompatible uses. Proposed changes in building and land uses were then compared to uses proposed in the No Action Alternative (GMPA 2000).

For the purposes of this analysis, incompatibility would occur if a new use could conflict with adjacent land uses or compromise the nature and character of the Presidio or surrounding neighborhoods. Other impacts from new land uses (such as adversely affecting historic properties or increasing traffic and noise) are discussed in their respective issue sections within this EIS.

In response to public comment on the Draft EIS, additional information is provided on the land uses assumed in each alternative and the maximum level of demolition and new construction that could occur in each (see Tables 39 and 40, respectively). For purposes of analysis, the following definitions apply to the building use categories for use in Table 39:

Industrial/Warehouse/Infrastructure: Industrial operations such as printing, vehicle service and repair, workshops of various kinds, and general storage and warehouse use. Structures and facilities specifically related to the operation of the park's utilities (water, electric, sewer, gas, telecom), public safety services (fire, police, emergency), and maintenance functions.

Office: Office uses including non-profit, for profit, Trust, and NPS. Includes medical offices and clinics.

Retail: Services including shops, restaurants, cafes, financial, postal, convenience and support services.

Lodging/Conference: All types of overnight accommodations from small hotel, bed and breakfast, dormitories, hostels, to short-term residences. Also includes meeting halls, clubs and assembly venues.

Recreational: Those buildings used for the express purpose of recreation. This includes exercise facilities, bowling alleys, recreation/community centers, and clubhouses.

Cultural: Includes such things as visitor facilities, chapels, interpretive sites, exhibit space, museum use, performing arts facilities and non-commercial theaters, community facilities, and artists studios.

Educational: Includes education centers, schools, universities/colleges, institutes, training facilities, libraries, archives, classrooms, and child care facilities.

Residential: All residential units and associated garages including houses, duplexes, apartments, efficiencies and other unit types. This includes SRO/dormitory units.

Military: All surviving specialized military/defense facilities including batteries, and powder magazines no longer in service as defense structures. Generally used for interpretation and storage.

POTENTIAL IMPACTS

No Action Alternative (GMPA 2000)

Changes from Existing Building and Land Uses

The general pattern of land use would not change under this alternative, although currently vacant buildings would be rehabilitated and reoccupied, the amount of residential space would decrease, and more lodging and visitor serving uses would be introduced. Intensively used areas concentrated in the

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Table 39: Summary of Proposed Building Uses by Planning District (sf)

Building Use	Existing	GMPA 2000 (No Action)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
CRISSY FIELD								
Industrial/Warehouse/Infrastructure	170,000	30,000	20,000	0	10,000	10,000	230,000	
Office	100,000	50,000	40,000	200,000	210,000	210,000	180,000	
Retail	0	20,000	0	0	40,000	0	150,000	
Lodging/Conference	0	140,000	0	0	0	240,000	0	
Recreational	0	40,000	20,000	0	90,000	0	0	
Cultural	70,000	280,000	230,000	230,000	220,000	290,000	50,000	
Educational	50,000	80,000	30,000	110,000	110,000	100,000	0	
Residential	0	0	0	0	0	0	0	
Military	0	0	0	0	0	0	0	
SUBTOTAL	610,000	390,000	640,000	340,000	540,000	680,000	850,000	610,000
MAIN POST								
Industrial/Warehouse/Infrastructure	40,000	40,000	40,000	20,000	20,000	20,000	40,000	
Office	400,000	570,000	530,000	650,000	560,000	620,000	630,000	
Retail	110,000	50,000	50,000	80,000	90,000	80,000	60,000	
Lodging/Conference	70,000	50,000	130,000	120,000	140,000	110,000	30,000	
Recreational	30,000	50,000	70,000	60,000	80,000	110,000	30,000	
Cultural	300,000	210,000	70,000	180,000	210,000	170,000	50,000	
Educational	30,000	20,000	20,000	20,000	10,000	30,000	30,000	
Residential	220,000	250,000	220,000	250,000	270,000	200,000	280,000	
Military	0	0	0	0	0	0	0	
SUBTOTAL	1,150,000	1,200,000	1,240,000	1,130,000	1,380,000	1,380,000	1,340,000	1,150,000
LETTERMAN								
Industrial/Warehouse/Infrastructure	150,000	50,000	10,000	10,000	10,000	10,000	60,000	
Office	1,060,000	1,070,000	1,210,000	1,470,000	1,080,000	1,090,000	1,150,000	
Retail	40,000	110,000	40,000	110,000	130,000	120,000	50,000	
Lodging/Conference	0	0	0	0	0	0	0	
Recreational	30,000	30,000	30,000	30,000	0	30,000	20,000	
Cultural	0	30,000	0	30,000	40,000	40,000	0	
Educational	0	0	0	0	0	0	0	
Residential	80,000	200,000	30,000	100,000	80,000	410,000	80,000	
Military	0	0	0	0	0	0	0	
SUBTOTAL	1,360,000	1,360,000	1,490,000	1,320,000	1,750,000	1,340,000	1,700,000	1,360,000
FORT SCOTT								
Industrial/Warehouse/Infrastructure	170,000	70,000	50,000	110,000	50,000	90,000	130,000	
Office	50,000	90,000	70,000	90,000	50,000	90,000	100,000	
Retail	0	10,000	0	0	0	0	0	
Lodging/Conference	300,000	60,000	60,000	200,000	150,000	90,000	0	

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Table 39: Summary of Proposed Building Uses by Planning District (sf)

Building Use	Existing	GMPA 2000 (No Action)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Recreational		20,000	20,000	30,000	20,000	20,000	20,000	30,000
Cultural		0	0	0	0	0	0	0
Educational		0	100,000	250,000	90,000	210,000	100,000	0
Residential		280,000	530,000	320,000	340,000	270,000	510,000	510,000
Military		30,000	20,000	10,000	20,000	20,000	20,000	30,000
SUBTOTAL	800,000	850,000	900,000	790,000	770,000	770,000	920,000	800,000
EAST HOUSING								
Industrial/Warehouse/Infrastructure		0	0	0	0	0	0	0
Office		10,000	10,000	10,000	10,000	10,000	10,000	10,000
Retail		0	0	0	0	0	0	0
Lodging/Conference		0	0	0	0	0	0	0
Recreational		0	0	0	0	0	0	0
Cultural		0	10,000	10,000	10,000	10,000	0	10,000
Educational		60,000	0	0	0	0	10,000	0
Residential		480,000	600,000	530,000	620,000	720,000	600,000	630,000
Military		0	0	0	0	0	0	0
SUBTOTAL	650,000	550,000	620,000	550,000	640,000	740,000	620,000	650,000
SOUTH HILLS								
Industrial/Warehouse/Infrastructure		30,000	60,000	40,000	40,000	40,000	60,000	30,000
Office		40,000	30,000	40,000	20,000	30,000	30,000	40,000
Retail		0	0	0	0	0	0	0
Lodging/Conference		0	0	0	0	0	0	0
Recreational		20,000	10,000	10,000	10,000	10,000	10,000	20,000
Cultural		0	0	0	20,000	20,000	0	0
Educational		0	0	0	0	0	0	0
Residential		240,000	180,000	180,000	0	240,000	0	860,000
Military		40,000	30,000	40,000	30,000	30,000	30,000	40,000
SUBTOTAL	990,000	370,000	310,000	310,000	120,000	370,000	130,000	990,000
PUBLIC HEALTH SERVICE								
HOSPITAL								
Industrial/Warehouse/Infrastructure		20,000	0	20,000	0	0	0	30,000
Office		0	0	0	0	50,000	0	300,000
Retail		0	0	0	0	0	0	0
Lodging/Conference		170,000	10,000	0	0	0	10,000	0
Recreational		10,000	0	0	0	10,000	0	0
Cultural		0	0	0	0	0	0	0
Educational		70,000	190,000	50,000	0	20,000	220,000	0
Residential		20,000	200,000	200,000	0	330,000	170,000	70,000

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Table 39: Summary of Proposed Building Uses by Planning District (sf)

Building Use	Existing	GMPA 2000 (No Action)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Military		0	0	0	0	0	0	0
SUBTOTAL	400,000	290,000	400,000	270,000	0	410,000	400,000	400,000
TOTAL ALL PLANNING DISTRICTS								
Industrial/Warehouse/Infrastructure	580,000	250,000	180,000	80,000	130,000	190,000	520,000	
Office	1,660,000	1,820,000	1,900,000	2,440,000	1,990,000	2,050,000	2,410,000	
Retail	150,000	190,000	90,000	190,000	260,000	200,000	260,000	
Lodging/Conference	540,000	260,000	190,000	320,000	290,000	450,000	30,000	
Recreational	110,000	150,000	160,000	120,000	210,000	170,000	100,000	
Cultural	370,000	530,000	310,000	470,000	500,000	500,000	110,000	
Educational	210,000	390,000	350,000	220,000	350,000	460,000	30,000	
Residential	1,320,000	1,960,000	1,480,000	1,310,000	1,910,000	1,890,000	2,430,000	
Military	70,000	50,000	50,000	50,000	50,000	50,000	70,000	
SUBTOTAL	5,960,000	5,010,000	5,600,000	4,710,000	5,300,000	5,690,000	5,960,000	5,960,000

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Table 40: Summary of Maximum Demolition and New Construction Allowed

Planning District	GMPA 2000 (No Action)		Final Plan		Final Plan Variant		Resource Consolidation		Sustainable Community		Cultural Destination		Minimum Management		
	Maximum Demolition	Maximum New Construction	New Demolition	New Construction	New Demolition	New Construction	New Demolition	New Construction	New Demolition	New Construction	New Demolition	New Construction	New Demolition	New Construction	
Crissy Field	220,000	0	40,000	70,000	270,000	0	220,000	150,000	70,000	140,000	50,000	290,000	0	0	
Main Post	50,000	100,000	20,000	110,000	20,000	0	100,000	330,000	40,000	270,000	50,000	240,000	0	0	
Letterman	0	0	30,000	180,000	40,000	0	80,000	470,000	20,000	0	70,000	410,000	0	0	
Fort Scott	0	50,000	70,000	170,000	10,000	0	80,000	150,000	30,000	0	80,000	200,000	0	0	
East Housing	100,000	0	100,000	70,000	100,000	0	160,000	150,000	100,000	190,000	130,000	100,000	0	0	
South Hills	620,000	0	680,000	0	680,000	0	870,000	0	620,000	0	860,000	0	0	0	
Public Health	130,000	20,000	130,000	130,000	130,000	0	400,000	0	10,000	20,000	130,000	130,000	0	0	
Service Hospital	TOTAL		1,120,000	170,000	1,070,000	710,000	1,250,000	0	1,910,000	1,250,000	890,000	620,000	1,370,000	1,370,000	0

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north would continue to accommodate a variety of uses, while the southern, less-developed areas would remain primarily as open space. The most dramatic change would be through the reduction in overall built square footage and the resulting net increase in open space. A total of 1.12 million square feet would be removed and up to 170,000 square feet of new construction would be allowed, resulting in a total of 5.01 million square feet. This would be a net reduction of approximately 16% in built space. Open space would increase by about 99 acres or 15%, from 695 acres to a total of 794 acres.

New visitor-oriented programs and services would be provided by tenants in leased building space, and additional open space would be created. This alternative proposes that the Presidio house a network of institutions devoted to stimulating understanding of and action on the world's most critical social, cultural, and environmental challenges. The incorporation of this land use program and associated visitor services and accommodations would enhance the park as a visitor destination.

Visitor and cultural/educational uses would expand under this alternative, and housing uses would be reduced. The breakdown of building space by use is shown in Table 39. The percentage breakdown of these uses would be approximately 33% of the built space would be office use; approximately 26% would be residential; approximately 29% would be for public uses; and the balance would be miscellaneous support and infrastructure uses.

The major change in land use would be with the removal of the Wherry Housing complex (approximately 620,000 sf) to restore open space in the South Hills district, and the removal of the Commissary and PX at Crissy Field to expand the marsh. The demolition would be somewhat offset by a relatively small amount of potential new construction (about 170,000 sf) at the Fort Scott, PSH, and the Main Post planning districts as needed to augment proposed uses. The general density and character of land uses would not change at the Main Post, Fort Scott and Letterman. There would be a reduction in built space at the PSH district, with the removal of the non-historic hospital wings.

Housing would continue to be dispersed throughout the south and eastern portions of the park and the number of housing units would be reduced by

more than half, from about 1650 to 770. Several residential clusters would be converted to lodging and conferencing functions.

At the Fort Scott and PSH Planning Districts, existing dormitory, residential, and hospital facilities would be adapted for educational, conference, and training uses with park mission-related programs. While the East Housing district would primarily be residential in character, some housing would be removed and other units converted for educational programs. Expanded cultural programs, museums, and visitor-serving uses at the Main Post and Crissy Field (Area B) would result in the enhancement of these areas as the primary focus for park visitors. The Letterman Planning District would retain its primarily office land use orientation.

The amount of land dedicated to open space would significantly increase under this alternative with the removal of non-historic buildings in the South Hills, East Housing, and Crissy Field Planning districts. These areas would primarily be used to enhance native habitat and natural resources such as the coastal dunes at the Wherry housing site, the riparian corridors within Tennessee Hollow, and an expanded marsh at Crissy Field.

Land uses in the neighborhoods surrounding the Presidio are primarily residential. These areas are densely developed and proposed Presidio land uses would be generally compatible with surrounding uses. Proposed land uses immediately within the Presidio walls would primarily be open space/recreation, with some residential, office, and institutional uses. The removal of the Wherry Housing complex in the South Hills district would increase open space and remove a current residential use from the vicinity of the neighborhoods to the south. Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to the neighborhoods would be the reoccupation of the PSH Planning District as a long-term educational and training facility. This area has been relatively unused since base closure and although its reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.) The remaining areas along the park's urban edge would

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continue to provide scenic, recreational, natural and open spaces. Since 1994, several improvements have been made in these areas by the Trust, the NPS, and the Golden Gate National Parks Association (GGNPA), including rehabilitation of the golf course (and opening to the public), rehabilitation of the Presidio Gate and Arguello Gate to improve pedestrian access and safety, rehabilitation of Building 1750/Lobos Dunes restoration, Mountain Lake Enhancement (underway), and the Crissy Field Marsh project (within Area A).

In conclusion, the No Action Alternative (GMPA 2000) would result in currently vacant building space being occupied and the current amount of residential space decreasing while visitor services would increase. Open space would be expanded. There would be no substantial conflicts with adjacent land uses.

Final Plan Alternative

Changes from Existing Conditions

The general existing land use pattern at the Presidio would not change substantially under this alternative, although currently vacant building space would be occupied, and more visitor-serving uses would be introduced. Office and other mixed uses would continue to be concentrated in the northeast with housing clusters nearby activity areas.

Under this alternative, total building space would be reduced by about 360,000 sf or 6%, from 5.96 million sf to 5.6 million sf. Open space would increase by about 15% or 99 acres. The removal of the Wherry Housing complex and some of the non-historic housing along East and West Washington Boulevard would increase open space in the southern part of the park. Some planning districts in the northern part of the Presidio would have an increase in density and square footage as a result of replacement construction. Districts that would have an increase in square footage over existing conditions include the Main Post, Letterman, Crissy Field, and Fort Scott. The PSH complex would remain at the same level of development, and there would be net reductions in the East Housing and South Hills planning districts. The number of housing units would remain the same,

though their locations would shift and the total amount of residential square footage would be reduced by about 470,000 sf.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to surrounding residential neighborhoods would be the reoccupation of the PSH Planning District for residential and educational uses. This area has been relatively unused since base closure, and although its reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. An increase in square footage dedicated to cultural, educational and visitor amenities in the Crissy Field district would attract more visitors to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes from the No Action Alternative (GMPA 2000)

With the Final Plan Alternative, the overall building square footage of Area B would be reduced, but not as much as under the No Action Alternative (GMPA 2000). More replacement construction would be allowed, in conjunction with slightly less demolition. Similar to under the No Action Alternative, most of the demolition would affect non-historic housing. New construction would be limited to the replacement of existing structures of similar size in existing areas of development, and design and siting of new construction would protect the character of the National Historic Landmark District. These actions would increase the overall square footage of Area B over the No Action Alternative (GMPA 2000) by about 590,000 sf to 5.6 million square feet (360,000 less than exists today). The amount of land dedicated to open space would be roughly the same as the No Action Alternative (GMPA 2000), or about 100 acres more than exist today.

The distribution of uses amongst the building space would be similar to the GMPA in that approximately one-third of building space would be dedicated to public uses (visitor amenities, cultural and educational uses, lodging, etc.),

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and one third to office use. Another third of the building space – or a greater percentage than in the No Action alternative – would be devoted to residential use. A lesser percentage would be devoted to industrial/warehouse space. The density of some planning districts would be greater than that in the No Action Alternative (GMPA 2000), in order to account for the replacement and re-distribution of some square footage demolished in primarily the South Hills district.

Under this alternative, the mix of cultural and educational programs, community and visitor-serving uses in the Main Post and Crissy Field Planning Districts would result in the enhancement of these areas as the primary focus for park visitors. Similar to the GMPA, the Main Post would continue to primarily be a mixed use district with a preference for office uses and an inviting setting for visitor orientation and community facilities. The Final Plan Alternative allows for a net increase of 30,000 sf over what currently exists at Crissy Field, which is a net difference of 260,000 sf from the No Action Alternative (GMPA 2000). However, the Final Plan Alternative commits to the long-term health of Crissy marsh and precludes any long-term leasing or development for the next two years (the estimated duration of the Crissy marsh study) within a designated area to avoid precluding expansion options. Lodging would be a permitted use, unlike under the No Action Alternative, office and industrial space would be reduced, and more cultural and educational uses would be accommodated at Crissy Field (Area B).

While allowing for some infill construction, the Letterman Planning District would retain its primarily office land use orientation with some residential and support services under the Final Plan Alternative. The Fort Scott planning district would host more educational and residential uses, and less conferencing, lodging, and support services than under the No Action Alternative. A net increase in built space of up to 100,000 sf, would be allowed to provide some replacement housing and to facilitate rehabilitation and reuse of the historic building clusters. In the PSH area, the Final Plan Alternative would also include more residential and educational use than the No Action Alternative, and less lodging/conference uses. Both alternatives would consider removal of the non-historic hospital wings, however the Final Plan Alternative would permit replacement of the square footage elsewhere in the district.

The planned removal of the Wherry Housing complex would be consistent with the No Action Alternative (GMPA 2000), however the Final Plan Alternative would also remove some of the non-historic housing along East and West Washington Boulevard to provide more open space in the South Hills planning district. Similar to the GMPA, some non-historic housing may be demolished in the East Housing Planning District for the restoration of Tennessee Hollow; but, unlike the GMPA, these units could be replaced by more compatible construction elsewhere in the planning district.

Land uses along the Presidio's urban edge would be very similar to those described under the No Action Alternative (GMPA 2000), except the PSH complex would accommodate more residential and less conference uses. Land uses along Crissy Field (Area B) would be more focused on park visitors. (See comparison with existing conditions, above.)

In summary, the Final Plan Alternative would have similar impacts as the No Action Alternative (GMPA 2000), with the exceptions of more building space used for housing and less for industrial/support uses and increased open space in the South Hills district. There would be no substantial conflicts with adjacent land uses.

Final Plan Variant

Changes from Existing Conditions

Under the Final Plan Variant, the general pattern of land use would not change, although currently vacant buildings would be rehabilitated and reoccupied, the amount of residential space would decrease, and more lodging and visitor serving uses would be introduced. Intensively used areas concentrated in the north would continue to accommodate a variety of uses, while the southern, less-developed areas would remain primarily as open space.

The most dramatic change would be through the reduction in overall built square footage and the resulting net increase in open space. Under this alternative, there would be a reduction of about 1.3 million sf or 20% of total built space within Area B, from 5.96 million sf to 4.7 million sf. There would be no new construction, only demolition. The most significant change from

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existing conditions would be the removal of the Wherry housing complex in the South Hills area, and building removals in the Crissy Field, East Housing, and PSHH districts. Remaining buildings would be converted to new uses, including an emphasis on conversion and sub-division of buildings for residential use. The removal of the Wherry Housing complex and some of the non-historic housing in East and West Washington Boulevard would allow for an increase in open space, which would increase by 124 acres from the current 695 acres. The number of housing units would be reduced from about 1,650 to 1,100 and the total amount of residential square footage reduced by about 950,000 sf.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to surrounding residential neighborhoods would be the reoccupation of the PSHH Planning District for residential and educational uses. This area has been relatively unused since base closure, and although its reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. An increase in square footage dedicated to cultural uses in the Crissy Field district would attract more visitors to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes from the No Action Alternative (GMPA 2000)

The Final Plan Variant would include no new construction and a net reduction in the total amount of built space, when compared to the No Action Alternative (GMPA 2000). The overall building square footage of Area B would be reduced by about 20%, from 5.96 million sf to 4.7 million sf. The amount of land dedicated to open space would increase by about 18% (124 acres) to 819 acres or 25 acres over the No Action Alternative (GMPA 2000) (794 acres). The Final Plan Variant would create more open space at Crissy

Field and in the East Housing districts than the No Action Alternative (GMPA 2000).

Within the 4.7 million sf of built space, more office use and more residential use would be accommodated than under the No Action Alternative (GMPA 2000). Approximately 40% of the building space would be for office use, which would occupy an estimated 1.9 million sf, for an increase of 240,000 sf over the No Action Alternative (GMPA 2000). Residential uses would use about 31% of the building space, and public uses would use about 24% of the built space. The balance of space would be for miscellaneous park support functions. Residential uses would continue to be dispersed through the Presidio; however, the number of units would be greater than the No Action Alternative (GMPA 2000) by 330. Replacement units for those removed would be gained through an aggressive approach to housing conversions and subdivisions.

Similar to the No Action Alternative (GMPA 2000), community programs and visitor-serving uses in the Main Post and Crissy Field Planning Districts would result in the enhancement of these areas as the primary focus for park visitors. The Main Post would accommodate more office and less cultural and educational space than under the No Action Alternative, while the Crissy Field (Area B) would include the reverse (less office, more cultural uses). In the Crissy Field and East Housing districts, this alternative would create more open space through building demolitions than the No Action Alternative (GMPA 2000), and would similarly expand Crissy marsh to a minimum 30 acres and restore the Tennessee Hollow watershed with a direct connection to Crissy Marsh. The Letterman district would accommodate more office space, despite some minor building demolition (40,000 sf), and less residential space than the No Action Alternative (GMPA 2000). Fort Scott would be a mixed-use complex with more emphasis on residential and educational uses, less emphasis on lodging/conference uses, and minor building demolition (10,000sf). The PSHH area would be primarily residential, and the non-historic wings of the hospital building would be removed and not replaced, as proposed in the No Action Alternative. Similar to the Final Plan Alternative, the South Hills planning district would contain more open space than the No Action Alternative (GMPA 2000) due to the removal of some housing along East and West Washington Boulevard.

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Land uses along the Presidio's urban edge would be very similar to those described under the No Action Alternative (GMPA 2000), except the PSH complex would accommodate more residential and less conference uses. Land uses along Crissy Field (Area B) would be more focused on park visitors. (See comparison with existing conditions, above.)

In conclusion, the Final Plan Variant would have similar effects as the No Action Alternative, with the exception of less built space, more office and residential use. Would create more open space at Crissy Field and the East Housing districts than the No Action Alternative (GMPA 2000). No substantial conflicts with adjacent land uses would occur.

Resource Consolidation Alternative

Changes from Existing Conditions

This alternative would change the existing land use pattern by removing all buildings from the southern half of the Presidio and concentrating active uses elsewhere. In the northern planning districts, currently vacant buildings would be returned to active use, and more lodging and visitor serving uses would be introduced. The amount of residential space and the number of residential units would decrease.

Under the Resource Consolidation Alternative, there would be a reduction of about 660,000 sf or 11% of total built space within Area B, from 5.96 million sf to 5.3 million sf. Open space would increase by 143 acres from the current 695 acres. In addition to removal of the Wherry Housing complex, this alternative would remove all East and West Washington Boulevard housing and the entire PSH complex. Planning districts in the northern part of the Presidio would have an increase in density and square footage to accommodate some replacement construction. The existing housing supply would be reduced by 740 units, from the current level of about 1650 units to about 910 units.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), changes in historic land uses adjacent to surrounding residential neighborhoods would include the removal of all uses from the PSH and South Hills planning districts. Increased square

footage dedicated to office and cultural uses in the Crissy Field district would attract more people to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes from the No Action Alternative (GMPA 2000)

The Resource Consolidation Alternative would remove a total of 1.91 million sf of building space, or 790,000 sf more than under the No Action Alternative. More replacement construction would also be allowed, with up to 1.25 million sf dispersed between the Main Post, Letterman, Fort Scott, Crissy Field and East Housing planning districts. Overall, the existing 5.96 million sf in Area B would be reduced by 11% to a total of 5.3 million sf, or 290,000 sf more than under the No Action Alternative. The amount of land dedicated to open space would be 44 acres more than under the No Action Alternative (GMPA 2000) for a total increase of 143 acres (or 20%) over existing conditions, to about 838 acres.

Within the 5.3 million sf of built space, more space would be devoted to office use than under the No Action Alternative (GMPA 2000), with office uses occupying about 46% of the space or roughly 2.4 million square feet. Residential and public uses would each constitute about 25% of the built space, similar to the No Action Alternative. The balance of space would be for miscellaneous park support functions. Residential uses would continue to be dispersed through the Presidio; however, the number of units would be greater than the No Action Alternative (GMPA 2000) by 140.

Similar to the No Action Alternative (GMPA 2000), the Main Post would be a mixed use district with a predominance of office use, but the total amount of allowable square footage in this district would be 180,000 sf more than the No Action Alternative (GMPA 2000). Building removals in the Crissy Field district would be the same as the GMPA to allow for restoration of open space and wetlands expansion. However, up to 150,000 sf of replacement construction could occur in this district to allow for new visitor-serving uses

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and would result in an increase of 150,000 sf more than the No Action Alternative (GMPA 2000). This alternative would provide for some infill housing, and related services in the Letterman Planning District with a net increase of 390,000 sf more than under the No Action Alternative (GMPA 2000). In the South Hills district, removal of the Wherry housing complex would be the same as under the No Action Alternative (GMPA 2000), but in addition, all of the East and West Washington Boulevard housing and the entire PSH complex would be removed and the areas restored to native habitat and open space. More non-historic housing (160,000 sf) in the East Housing planning district would be removed under this alternative than in the No Action Alternative (GMPA 2000) to restore Tennessee Hollow; however, replacement construction of up to 150,000 sf would be allowed.

Land uses along the Presidio's urban edge would be very similar to those described under the No Action Alternative (GMPA 2000), except the PSH complex would be removed. Land uses along Crissy Field (Area B) would be more focused on park visitors. (See comparison with existing conditions, above.)

In conclusion, the Resource Consolidation Alternative would result in increased open space compared to the No Action Alternative (GMPA 2000), with removal of the entire PSH complex. There would be a greater number of residential units than in the No Action Alternative (GMPA 2000). There would not be any substantial conflicts with adjacent land uses.

Sustainable Community Alternative

Changes from Existing Conditions

Overall, under the Sustainable Community Alternative, current land use patterns would remain the same, although currently vacant building space would be occupied, and more visitor-serving uses would be introduced. Office and other mixed uses would continue to be concentrated in the northeast with housing clusters nearby activity areas.

The most dramatic change would be the removal of the Wherry housing complex in the South Hills district and replacement construction in the Main Post, Crissy Field, and East Housing districts. Under this alternative, there

would be a reduction of about 270,000 sf or 5% of total built space within Area B, from 5.96 million sf to 5.69 million sf. Open space would increase by 77 acres from the current 695 acres. The PSH complex would remain at about its current density but would be converted to residential uses. The residential pattern would remain dispersed around the park and the existing housing supply would be reduced by about 220 units, from the current level of about 1650 units to about 1430 units.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to surrounding residential neighborhoods would be the reoccupation of the PSH Planning District for residential and other accessory uses. This area has been relatively unused since base closure, and although its reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. An increase in square footage dedicated to cultural, educational and visitor amenities in the Crissy Field district would attract more visitors to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes from the No Action Alternative (GMPA 2000)

This alternative would remove a total of 890,000 sf of building space, or 230,000 sf less than under the No Action Alternative, and would permit up to 620,000 sf of replacement construction, or 450,000 sf more than the No Action Alternative. Overall, the existing 5.96 million sf in Area B would be reduced by only 5% to a total of 5.69 million sf (680,000 sf more than the No Action Alternative). The amount of land dedicated to open space would be less than the No Action Alternative by about 22 acres, representing a net increase of about 77 acres over existing conditions.

Within the 5.69 million sf of built space, about the same percentage of space would be devoted to office uses and public or visitor-serving uses as in the No

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Action Alternative (GMPA 2000). Approximately one third of the space would be used for each. Another third of the space would be used for residential uses, representing an increase from the No Action Alternative. Residential uses would continue to be dispersed through the Presidio; however, the number of units would be greater than the No Action Alternative (GMPA 2000) by 660.

Similar to the No Action Alternative, the Main Post would be a mixed use district with a predominance of office use, however, the total amount of allowable square footage in this district would be 180,000 sf more than the No Action Alternative (GMPA 2000). Infill construction would be allowed to support this alternative's concept of a live-work environment. The Crissy Field planning district would have similar uses as the No Action Alternative (GMPA 2000), with more overall space, and an emphasis on cultural, educational, and office uses. There would be 150,000 sf less building removal in the Crissy Field district than in the GMPA and up to 140,000 sf of new construction allowed for new visitor-serving uses. This would result in an increase of 290,000 sf more than the No Action Alternative (GMPA 2000) for Crissy Field. The Letterman Planning District would primarily accommodate office uses, and there would be a 20,000 sf reduction in built space from the No Action Alternative (GMPA 2000). Fort Scott would be a mixture of residential, lodging, and conferencing uses as described in the No Action Alternative (GMPA 2000), with the addition of educational uses; no new construction would be allowed. In the South Hills district, removal of the Wherry housing complex would be the same as under the No Action Alternative (GMPA 2000). A total of 190,000 sf of replacement construction, for housing, would be allowed within the East Housing district. Allowable new construction would be the same as the No Action Alternative (GMPA 2000) for the PHS complex, but only 10,000 sf would be removed (as opposed to 130,000 under the No Action Alternative).

Land uses along the Presidio's urban edge would be very similar to those described under the No Action Alternative (GMPA 2000), except the PHS complex would accommodate more office and residential uses, and less conference uses. Land uses along Crissy Field (Area B) would be more focused on park visitors. (See comparison with existing conditions, above.)

In summary, the Sustainable Community Alternative would have effects similar to the No Action Alternative (GMPA 2000), except that there would be less open space and more residential use. No substantial conflicts with adjacent land uses would occur.

Cultural Destination Alternative

Changes from Existing Conditions

Overall, under the Cultural Destination Alternative, current land use patterns would remain the same, although currently vacant building space would be occupied, and more visitor-serving uses would be introduced. Office and other mixed uses would continue to be concentrated in the northeast with housing clusters nearby activity areas.

The most dramatic change would be the removal of the Wherry housing complex in the South Hills district and replacement construction in the Main Post, Letterman, Crissy Field, and Fort Scott planning districts. This alternative would retain Area B's current 5.96 million sf, with a maximum of 1.37 million sf of building demolition, and an equivalent amount of replacement construction. About 900,000 sf of non-historic housing would be removed from the South Hills planning district and replaced in the north. Open space would increase by 112 acres (16%) over existing conditions to provide for an increase in native plant habitat and recreational opportunities. The increase in open space would largely be accomplished through the removal of non-historic housing in the South Hills district. Most planning districts in the north would have an increase in square footage and density. There would be an increase in the number of existing housing units, from about 1650 to 1700.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to surrounding residential neighborhoods would be the reoccupation of the PHS Planning District for residential and educational uses. This area has been relatively unused since base closure, and although its reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. An increase in square footage dedicated to cultural, educational and visitor amenities in the Crissy Field

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district would attract more visitors to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes from the No Action Alternative (GMPA 2000)

The Cultural Destination Alternative would remove and replace a total of 1.37 million sf, more than under the No Action Alternative, and would ultimately maintain the existing 5.96 million square feet of building space in Area B. This would represent about 950,000 sf more than under the No Action Alternative. The amount of land dedicated to open space would increase by about 13 acres over the No Action Alternative (GMPA 2000), or by about 111 acres (16%) overall, to a total of 807 acres.

Within the 5.96 million sf of built space, approximately one-third of building space would be dedicated to public uses, one third to residential, and one third to office use. This represents a greater percentage of residential use than in the No Action Alternative (GMPA 2000), and residential square footage would be substantially more (about 570,000 sf more), providing 1,700 dwelling units, or more than twice the number in the No Action Alternative (GMPA 2000). The increase in housing units would be accomplished through a combination of replacement construction and conversions of existing structures and would provide a more diverse housing stock for the Presidio community.

As in the No Action Alternative (GMPA 2000), the Main Post would continue its role as the "heart of the Presidio," and the predominant uses would be office, community and public amenities. Through additional demolition and new construction, the total square footage for the Main Post would be 140,000 sf more than under the No Action Alternative. Crissy Field would be the primary visitor activity core and compared to the No Action Alternative (GMPA 2000), would have a significant increase in building space (460,000 sf more than No Action) providing a mix of cultural, educational, office, and lodging uses. Construction of infill housing and related services at the

Letterman Planning District would counterbalance the office use in this area, representing a net increase in built space of 340,000 sf over the No Action Alternative (GMPA 2000). The Fort Scott planning district would host similar uses as proposed in the No Action Alternative (GMPA 2000), but there would be a greater amount of space dedicated to residential, office and educational uses, less warehouse uses, and an increase in 70,000 sf of building space when compared to the No Action Alternative (GMPA 2000). The East Hills Planning District would continue to serve as a primarily residential area; unlike the No Action Alternative (GMPA 2000), most non-historic housing would be removed and replaced. The PSH would be adapted for education uses with supporting residential uses.

Land uses along the Presidio's urban edge would be very similar to those described under the No Action Alternative (GMPA 2000), except the PSH complex would accommodate more residential and less conference uses. Land uses along Crissy Field (Area B) would be more focused on park visitors. (See comparison with existing conditions, above.)

In conclusion, the Cultural Destination Alternative would create more open space in the South Hills district than the No Action Alternative (GMPA 2000). There would also be more residential, office use and public uses than would result under the No Action Alternative (GMPA 2000). No substantial conflicts with adjacent land uses would occur.

Minimum Management Alternative

Changes from Existing Conditions

This alternative proposes no significant changes to existing conditions. There would be no building demolition or new construction, and existing buildings (including those that have been vacant for a while) would be rehabilitated for reuse, including the long-term reuse of the Wherry Housing complex.

Aside from the Letterman Digital Arts Center (LDAC) project (reviewed under previous environmental analysis), the only other major change in historic land use adjacent to surrounding residential neighborhoods would be the reoccupation of the PSH Planning District for residential and educational uses. This area has been relatively unused since base closure, and although its

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reuse was previously analyzed in the 1994 GMPA EIS, it would represent a change in current activity levels in this area. Uses in the Crissy Field district would attract more visitors to the bayfront area of Area A. Mitigation requiring monitoring of Area B uses, and coordination with the NPS to ensure that proposed uses compliment Area A, would minimize this potential impact. The remaining areas along the park's urban edge would continue to provide scenic, recreational, natural and open spaces. (For a discussion of the noise, visual, traffic and other related effects of the proposed reuse activities and corresponding mitigation measures, refer to relevant sections in this EIS.)

Changes to the No Action Alternative

This alternative proposes only minimal management of the park to protect the visiting public and existing site resources. Therefore, in contrast to the No Action Alternative (GMPA 2000), there would be no building demolition or new construction, and no land use changes. The total built square footage would remain at 5.96 million sf (as opposed to the No Action's total of 5.01 million sf) and the only change to open space would be a gain of 7 acres through the construction of the LDAC project at Letterman (in contrast the No Action's increase of 99 acres). The most substantive difference between this alternative and the No Action Alternative (GMPA 2000) would be the retention and reuse of Wherry housing in the South Hills. (Under the No Action Alternative (GMPA 2000), these units would be demolished and the area converted to open space/native plant communities).

Existing buildings would be rehabilitated for occupancy. In contrast to the No Action Alternative (GMPA 2000), office and residential uses would be the predominant land uses, each at about 40% of the total square footage. The balance of space would be split between public type amenities and miscellaneous support uses. Office uses would continue to be concentrated in the northeast. Cultural and educational uses would be less than proposed under the No Action Alternative (GMPA 2000). These uses would be concentrated in existing facilities primarily at the Main Post and Crissy Field planning districts. Residential uses would remain in existing locations, dispersed throughout the south and west. The total number of units, about 1650, would remain the same; this figure is greater than proposed under the No Action Alternative (GMPA 2000) by about 880 units.

Land uses along the Presidio's urban edge would be generally compatible with existing adjacent uses, since there would be no significant change from current conditions except for re-activation of the PSH complex. However, there would be a substantial reduction in the open space benefits when compared to the No Action Alternative (GMPA 2000).

In summary, the Minimum Management Alternative would not result in any change to existing conditions, beyond the leasing of existing structures. There would be no demolition and no new construction, and less open space than the No Action Alternative (GMPA 2000). There would be more office and residential uses than would occur under the No Action, and, less public uses. No substantial conflicts with adjacent land use would result.

MITIGATION

The following measure would apply to all alternatives.

CO-1 *Monitoring of Area B Uses.* Through the course of implementation, including leasing activities, the Trust would review proposed uses for specific areas buildings for their consistency with the PTMP Planning Principles to ensure protection of the Presidio's cultural, natural, scenic and recreational resources. The Trust would also consult with NPS for all activities that would have the potential to significantly affect Area A resources.

4.4.2 SOCIOECONOMIC ISSUES/HOUSING SUPPLY

METHODOLOGY

Housing Supply

This section describes the methodology for estimating the project impact under each alternative on housing demand in the Housing Impact Area (HIA). The project impact is defined both in terms of existing conditions and as the difference between the impact under each alternative and the impact under the No Action Alternative (GMPA 2000), which represents the future baseline.

The specific methodology for the analysis involved the following steps:

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Step 1: Employment Generation – The housing impact analysis begins with an estimation of the total number of jobs generated by each alternative. This process is displayed in Tables 1, 2, and 3 in Appendix E. For each alternative, the square footage of each land use is divided by its corresponding employee density (square feet per employee). This results in the total number of employees under each alternative, including existing employees at the Presidio. Employee densities from other studies completed for the Trust were used for this calculation.

The number of existing employees (2,020) is then subtracted to determine new employment. Finally, to allow comparison with the No Action Alternative (GMPA 2000), the number of new employees generated by the No Action Alternative (GMPA 2000) is subtracted from the new employment generated by each alternative. This results in the number of new employees generated by each alternative in excess of the No Action Alternative (GMPA 2000) employment. Employment under the No Action Alternative (6,460 jobs in 2020) was estimated by adjusting figures contained in the GMPA EIS. Adjustments included the addition of jobs associated with the LDAC project, office use of Building 1750, and the second phase of the Thoreau Center, in addition to the use of conservative employment density factors for all office and lodging uses.

Step 2: Calculating Housing Supply – To determine the net new supply of housing, the anticipated number of units in each alternative was compared to the existing number of units and to the number proposed in the No Action Alternative (GMPA 2000). These calculations, shown in Table 4 and Table 6 in Appendix E, express the net new supply of housing in the Presidio.

Step 3: Calculating Housing Demand – In Step 3, housing demand is projected by translating total employment under each alternative and new project employment (calculated in Step 1) into households (see Table 41a). This is done by dividing each employment figure by the number of employed residents per household in the Bay Area in 2020 (ABAG 2000). As part of the jobs/housing balance impact analysis, total demand by Presidio-based employees for housing on-site at the Presidio is estimated based upon a survey of Presidio-based employees (Sedway Group 2001 and Presidio Trust 1999). This demand estimate indicates the number of employees that would want to

live at the Presidio, recognizing the importance of many factors such as renter/owner status, schools, and household type in residential locational decisions.

Step 4: Comparing Housing Supply and Demand – Table 41a contrasts housing supply with housing demand in the Presidio for all alternatives when compared to the No Action Alternative (GMPA 2000). The net new supply (from Step 2) is subtracted from the new household demand (from Step 3). The difference represents the “net-new” household demand in the HIA for all alternatives when compared to the No Action Alternative (GMPA 2000). All alternatives can also be compared to the existing housing supply, and the total adjusted Presidio-based housing demand can be compared to the projected supply (presented in Table 41c). Any one of these three comparisons can be used to define the “jobs/housing balance.”

Step 5: Regional Impact Analysis – The final step gauges each alternative’s impact on the regional housing market. The last column in Table 41a presents each alternative’s additional household demand as a percentage of the additional households in the HIA as projected by ABAG between 2000 and 2020. For the purposes of this analysis, the year 2020 is used as the Presidio build-out year for each alternative.

Single Room Occupancy/Dorm Room Analysis – Single room occupancy/dorm rooms are treated separately in Table 41b. Only a supply- side analysis is completed, because the demand for single room occupancy/dorm rooms is assumed to equal the supply based on the presence of interns, volunteers, and other program partners under all alternatives. The number of proposed single room occupancy/dorm rooms under each alternative is compared to the number of units under the No Action Alternative (GMPA 2000) (Table 41b).

Jobs/Housing Balance

The concept behind a “jobs/housing balance” is to strike a balance between the number of households and the number of jobs in an area. A jobs/housing balance theoretically promotes a healthy housing market, where supply equals demand. Other benefits can also result, such as shorter commutes for residents and a reduction in traffic congestion.

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Table 41a: Presidio Housing Impact Analysis: New Demand and Supply of Each Alternative Compared to the No Action Alternative (GMPA 2000)

Alternative	New Employment (a)	New Household Demand (b)	Net New Supply (c)	Additional Household Demand In HIA (d)	% of Total New Households In HIA 2000 - 2020 (e)
No Action/GMPA 2000 (Future Baseline)	4,439	2,840	0	2,840	2.05
Final Plan	428	274	790	(516)	-0.37
Final Plan Variant	167	107	465	(358)	-0.26
Resource Consolidation	2,021	1,293	364	929	0.67
Sustainable Community	1,062	680	683	(3)	0.00
Cultural Destination	1,391	884	926	(42)	-0.03
Minimum Management	1,364	873	611	262	0.19

Sources: The Presidio Trust; Metropolitan Transportation Commission, Superdistrict and County Summaries of ABAG Projections, 2000; Bay Area Economics, 2002.

Notes:

- (a) From Housing Appendix Table 3: Employment Generation Analysis.
- (b) New Household Demand equals New Project Employment divided by Employed Residents per Household for the Bay Area in 2020: 1,563.
- (c) Assumed supply of conventional dwelling units from Housing Appendix Table 4: Presidio Single-Family and Multifamily Housing Supply.
- (d) Additional Household Demand In HIA equals New Household Demand minus Net New Supply.
- HIA = Housing Impact Area, as defined by Table 16 in the Affected Environment Community Chapter: Definition of The Housing Impact Area.
- (e) Total New Households in HIA = 138,469. From Table 17 in the Affected Environment Community Chapter: Housing Impact Area Characteristics.

Table 41b: Projected Presidio SRO and Dormitory Housing Supply

Alternative	Projected Units (a)	No Action (GMPA 2000) Units (b)	Net New Supply (c)
No Action (GMPA 2000)	262	262	0
Final Plan	352	262	90
Final Plan Variant	138	262	(124)
Resource Consolidation	40	262	(222)
Sustainable Community	238	262	(24)
Cultural Destination	272	262	10
Minimum Management	538	262	276

Sources: The Presidio Trust; Bay Area Economics, 2002.

Notes:

- (a) Assumed supply of dormitory style units under each alternative. Currently, there are about 540 SRO/dorm units at the Presidio.
- (b) No Action (GMPA 2000) Units represents the number of dormitory style units assumed in 2020 under this alternative.
- (c) Net New Supply is the difference between Proposed Units and No Action (GMPA 2000) Units.

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Table 41c: Jobs/Housing Balance in the Presidio

Alternative	Total Presidio Housing Supply (a)	Supply as a Percent of New Housing Demand		Supply as a Percent of Total Housing Demand		Supply as a Percent of Presidio-based Demand	
		New Household Demand (b)	Jobs/Housing Balance	Total Demand (c)	Jobs/Housing Balance	Presidio-based Demand (d)	Jobs/Housing Balance
No Action (GMPA 2000) (Baseline) (c)	505	2,840	18%	4,132	12%	1,398	36%
Final Plan	1,295	3,114	42%	4,406	29%	1,486	87%
Final Plan Variant	970	2,947	33%	4,239	23%	1,377	70%
Resource Consolidation	869	4,133	21%	5,425	16%	1,733	50%
Sustainable Community	1,188	3,520	34%	4,812	25%	1,549	77%
Cultural Destination	1,431	3,724	38%	5,016	29%	1,611	89%
Minimum Management	1,116	3,713	30%	5,005	22%	1,607	70%

Sources: The Presidio Trust; Sedway Group; Bay Area Economics, 2002.

Notes:

- (a) Projected supply of conventional dwelling units. From Housing Appendix Table 6: Presidio Single-Family and Multifamily Housing Supply
- (b) From Housing Appendix Table 7: Presidio Housing Impact (does not include SRO/dorm units)
- (c) From Housing Appendix Table 9: Total Housing Demand Analysis
- (d) Total housing demand adjusted to reflect the desire of Presidio-based employees to live in the Presidio. Sedway Group, 2002.

As explained above (Step 4), Table 41c presents three separate comparisons that can be used to define the jobs/housing balance under each of the PTMP alternatives. The impact analysis provides comparisons of total housing demand to housing supply, comparisons of net new housing demand to housing supply, and comparisons of Presidio-based demand to supply.

Based on conversation with ABAG staff, this analysis assumes that the level of Presidio development projected by ABAG approximates the level of development under the GMPA, and any additional plans developed since the GMPA process (personal communication Fassinger). Therefore, any project impact resulting from each alternative represents an increase or decrease from ABAG's projected number of households in the HIA.

POTENTIAL IMPACTS

INCREASED DEMAND FOR HOUSING

No Action Alternative (GMPA 2000)

As shown in Table 41a, new employment under the No Action Alternative (GMPA 2000) would generate demand for 2,840 new households, or approximately 2.05 percent of the new households projected in the HIA between 2000 and 2020.

Final Plan Alternative

New employment under the Final Plan Alternative would generate demand for more housing units than the No Action Alternative (GMPA 2000), but would

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also maintain the existing supply of housing, unlike the No Action Alternative (GMPA 2000) (see Tables 4Ia and 4Ic). Overall, the Final Plan Alternative would reduce housing demand in the HIA by 516 households, or 0.37 percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000).

Final Plan Variant

New employment under the Final Plan Variant would generate demand for more housing units than the No Action Alternative (GMPA 2000), and would maintain more of the existing supply of housing, but less than the Final Plan (see Tables 4Ia and 4Ic). Overall, the Final Plan Variant would reduce housing demand in the HIA by 358 households, or 0.26 percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000)).

Resource Consolidation Alternative

The Resource Consolidation Alternative would generate demand for more housing units than the No Action Alternative (GMPA 2000), and would maintain more of the existing supply of housing, but less than the Final Plan Alternative (see Tables 4Ia and 4Ic). Overall, the Resource Consolidation Alternative would result in demand for 929 new households in the HIA, or 0.67 percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000).

Sustainable Community Alternative

The Sustainable Community Alternative would generate demand for more housing units than the No Action Alternative (GMPA 2000), and would maintain more than half of the existing supply (see Tables 4Ia and 4Ic). Overall, the Sustainable Community Alternative would reduce housing demand in the HIA by 3 households, a negligible percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000).

Cultural Destination Alternative

The Cultural Destination Alternative would generate more demand for housing than the No Action Alternative (GMPA 2000), and would provide the most housing among all the alternatives (see Tables 4Ia and 4Ic). Overall, the Cultural Destination Alternative would result in a decreased demand for 42 new households in the HIA, or 0.03 percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000).

Minimum Management Alternative

As shown in Tables 4Ia and 4Ic, the Minimum Management Alternative would generate more housing demand than the No Action Alternative (GMPA 2000) and would maintain the existing housing supply. Overall, the Minimum Management Alternative would increase housing demand in the HIA by 262 new households, or 0.19 percent of the additional households in the HIA between 2000 and 2020 when compared to the No Action Alternative (GMPA 2000).

JOBS/HOUSING BALANCE

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), 505 housing units would be provided. This housing supply would meet approximately 12 percent of the demand for housing based upon total household demand generated under the alternative, and 18 percent of net new housing demand. Approximately 36 percent of demand by Presidio-based employees would be met by this alternative (see Table 4Ic), without accounting for the demand and supply of dormitory style rooms (Table 4Ib). The No Action Alternative (GMPA 2000) would provide the least number of housing units among the alternatives due to the removal of existing housing, and as a consequence, contributes the least towards achieving a jobs/housing balance. As called for in the GMPA, progress towards the jobs/housing balance would be monitored over time. If additional housing for Presidio-based employees were needed, the conversion or adaptive rehabilitation of structures for residential use would be considered.

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Final Plan Alternative

Under the Final Plan Alternative, 1,295 housing units would be provided (not including SRO/dorm rooms). This housing supply would meet approximately 29 percent of the demand for housing, based upon total household demand generated under the alternative, and 42 percent of net new housing demand (see Table 41c), without accounting for the demand and supply of dormitory style rooms (Table 41b). This alternative would provide housing in a quantity sufficient to meet 87 percent of Presidio-based employees housing demand, a significantly higher proportion than all other alternatives except the Cultural Destination Alternative. Among the alternatives, the Final Plan Alternative would contribute the most to achieving a jobs/housing balance as measured by two of the three job/housing calculations.

Final Plan Variant

Under the Final Plan Variant, 970 housing units would be provided (not including SRO/dorm rooms). This housing supply would meet approximately 23 percent of the demand for housing, based upon total household demand generated under the alternative, and 33 percent of net new housing demand (see Table 41c). This alternative would provide more housing to meet the Presidio-based employees housing demand (70 percent) than the No Action and Resource Consolidation Alternatives, the same amount as the Minimum Management Alternative, and somewhat less than the remaining alternatives, without accounting for the demand and supply of dormitory style rooms (Table 41b).

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, 869 housing units would be provided. This housing supply would meet approximately 16 percent of the total demand for housing, and 21 percent of net new housing demand. Approximately 50 percent of demand by Presidio-based employees would be met by this alternative (see Table 41c), without accounting for the demand and supply of dormitory style rooms (Table 41b). The Resource Consolidation Alternative would result in a reduction of the existing housing supply due to the removal of existing housing. As a consequence, this alternative would contribute less towards achieving a jobs/housing balance

than the Final Plan, Final Plan Variant, Sustainable Community, or Cultural Destination Alternatives, but more than the No Action Alternative (GMPA 2000).

Sustainable Community Alternative

Under the Sustainable Community Alternative, 1,188 housing units would be provided. This housing supply would meet approximately 25 percent of the total demand for housing, and 34 percent of net new housing demand (see Table 41c). The Sustainable Community Alternative would provide housing supply in a quantity somewhat less than anticipated to be sufficient to meet Presidio-based employees housing demand (77 percent), without accounting for the demand and supply of dormitory style rooms (Table 41b). This alternative would contribute more towards achieving a jobs/housing balance than all other alternatives, except the Final Plan and Cultural Destination Alternatives.

Cultural Destination Alternative

Under the Cultural Destination Alternative, 1,431 housing units would be provided, the largest quantity of housing proposed among the alternatives. This housing supply would meet approximately 29 percent of the total demand for housing, and 38 percent of net new housing demand (see Table 41c). The Cultural Destination Alternative would provide sufficient housing supply to meet 89 percent of anticipated Presidio-based employees housing demand, without accounting for the demand and supply of dormitory style rooms (Table 41b).

Minimum Management Alternative

Under the Minimum Management Alternative, the existing 1,116 unit supply of housing would be retained. This housing supply would meet approximately 22 percent of the total demand for housing, and 30 percent of net new housing demand (see Table 41c). Along with the Final Plan Variant, this alternative's housing supply would meet approximately 70 percent of housing demand by Presidio-based employees, contributing less toward a jobs/housing balance than the Final Plan, Sustainable Community, or Cultural Destination

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Alternatives, but more than the No Action (GMPA 2000) and Resource Consolidation Alternatives.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The following measure would apply to all alternatives.

CO-2 Jobs/Housing Balance Monitoring. Through the ongoing review of housing demand, occupancy and unit mix, progress towards the jobs/housing balance would be monitored. Housing opportunities would accommodate Presidio-based employees at a range of income levels.

4.4.3 SCHOOLS

METHODOLOGY

The effect of an alternative on schools is calculated by comparing the number of school children generated under each alternative to existing capacity at Presidio – serving public elementary, middle, and high schools.

Resident population estimates are shown in Table 42. The estimates for the number of school-aged children at the Presidio are based on the average number of children aged 5 through 10, 11 through 13, and 14 through 17 in the City and County of San Francisco from 1994 through 2000, as a percentage of the total population. From 1994 through 2000 an average of 5.6 percent of San Francisco's population was aged 5 through 10, an average of 2.8 percent was aged 11 through 13, and an average of 3.8 percent was aged 14 through 17 (Schools Appendix Table 1 in Appendix F). These ratios are applied to the Presidio resident population estimates under the alternatives to estimate the percentage of Presidio residents aged 5 through 10, 11 through 13, and 14 through 17 under each alternative. This process is displayed in Table 43. Estimates for the Presidio resident population are derived from current residential leasing information. A household size of 2.5 persons per household has been applied to the number of residential units assumed under each alternative to calculate a resident population. Residents of single room

occupancy/dormitory rooms have not been included in this analysis, because school age children will not occupy dormitory units at the Presidio.

Table 42: PTMP Resident Population Estimates

Alternative	Residential Units	Residents	Dormitory Units	Dormitory Residents	Total Residential Population
No Action (GMPA 2000)	510	1,260	260	400	1,660
Final Plan	1,300	3,240	350	530	3,770
Final Plan Variant	970	2,430	140	210	2,630
Resource Consolidation	870	2,170	40	60	2,230
Sustainable Community	1,190	2,970	240	360	3,330
Cultural Destination	1,430	3,580	270	360	3,990
Minimum Management	1,120	2,790	540	810	3,600

Source: Association of Bay Area Governments, Projections 2000; The Presidio Trust, Bay Area Economics, 2002.

Notes:

Household size assumptions based on current residential leasing data from the Presidio Trust.

Assumptions:

Household size (a): 2.5 persons

Residents per Dormitory Unit: 1.5 persons

Estimates for the population in San Francisco aged 5 through 10, 11 through 13, and 14 through 17 in 2000 are supplied by Woods & Poole Economics Inc. of Washington, D. C., an economic forecasting service that uses a database containing more than 550 economic variables for every county in the United States for every year from 1970 through 2025. Data provided by Woods & Poole are used regularly by county and state governments throughout the U.S. for planning purposes. Woods & Poole also provides data to federal agencies including the Department of Interior, Department of Defense, Environmental Protection Agency, and Department of Veteran Affairs.

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Table 43: Public School Enrollment Estimates

Alternative	Residential Population	Total Residents	Total Residents	Total Residents	Presidio Public Elementary School Enrollment		Presidio Public Middle School Enrollment		Presidio Public High School Enrollment		Total Enrollment
					Build-Out	Public School Capacity (d)	Build-Out	Public School Capacity (d)	Build-Out	Public School Capacity (d)	
No Action (GMPA 2000)	1,260	66	33	45	48	273	24	221	33	57 (at Galileo)	105
Final Plan	3,240	180	91	124	125	273	63	221	86	57 (at Galileo)	273
Final Plan Variant	2,430	135	68	93	93	273	47	221	64	57 (at Galileo)	205
Resource Consolidation	2,170	114	58	79	84	273	42	221	58	57 (at Galileo)	184
Sustainable Community	2,970	156	79	108	114	273	58	221	79	57 (at Galileo)	251
Cultural Destination	3,580	188	95	130	138	273	69	221	95	57 (at Galileo)	302
Minimum Management	2,790	147	74	101	107	273	54	221	74	57 (at Galileo)	235

Source: Woods & Poole Economics, Inc.; California Department of Education; Bay Area Economics, 2002.

Notes:

- (a) San Francisco County, California 2000 Data Pamphlet, Woods & Poole Economics, Inc.
- (b) California Department of Education, Education Demographics Unit.
- (c) Population for non-dormitory units.
- (d) Schools Appendix Table 2.

Assumptions:

- % of Residents 5-10 (a) 5.6%
- % of Residents 11-13 (a) 2.8%
- % of Residents 14-17 (a) 3.8%
- San Francisco Public School Enrollment Rate (b) 69.3%

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The estimate of the percentage of Presidio school-aged children enrolled in San Francisco public schools is based on the total number of students in San Francisco public schools, as a percentage of the population in San Francisco aged 5 through 17. SFUSD enrollment data are provided on California Department of Education School District Web site, which shows that there were 62,041 children in kindergarten through 12th grade in the 1999-2000 school year. Demographic estimates from Woods & Poole show that there are a total of 90,960 children in San Francisco in 2000 aged 5 through 17. Dividing this total by the 1999-2000 K-12 population in SFUSD generates a public school enrollment rate of 68.2 percent.

However, between 1993-1994 and 1999-2000 the public school enrollment rate of San Francisco children aged 5 through 17 averaged 69.3 percent per year.¹ Over the 7 school years from 1993-1994 through 1999-2000, the public school enrollment rate for SFUSD has ranged from a high of 72.7 percent in 1994 to a low of 67.7 percent in 1998.² Therefore, for this purpose of this analysis, a public school enrollment rate of 69.3 percent has been selected for Presidio residents in 2000 and 2020. The school enrollment data are presented in Schools Appendix Table 1 in Appendix F.

The SFUSD high schools serving the Presidio are currently over their combined capacity. Galileo High School itself, however, has excess space for an additional 57 students. Therefore, if development under an alternative generates 57 or fewer public high school students, it is assumed that these students would be accommodated by Galileo High School, and a significant impact would not occur.

Note that comparing the number of Presidio school children at build-out (2020) to SFUSD's existing capacity is problematic; school enrollment and facilities are likely to change significantly over the next 20 years. SFUSD

1 Years for which data is available from the State of California Department of Education, Education Demographic Unit.

2 Based on population estimates of San Francisco residents aged 5 through 17 provided by Woods & Poole Economics, Inc.

does not project enrollment and capacity needs beyond 1 year. Consequently, this analysis only provides a preliminary estimate of impacts, using the only available information.

POTENTIAL IMPACTS

INCREASED DEMAND FOR SCHOOL FACILITIES

No Action Alternative (GMPA 2000)

As shown in Table 42, the No Action Alternative (GMPA 2000) would generate 1,260 Presidio residents at build-out (excluding residents of single room occupancy/dorm rooms). This population would result in a total of 48 elementary school students, 24 middle school students, and 33 high school students in the SFUSD (Table 43). For SFUSD elementary and middle schools serving the Presidio (Schools Appendix Table 2), there would be no impact, because their capacity exceeds the number of public elementary and middle school students generated by the Presidio. Although SFUSD high schools serving the Presidio already have more students than their combined existing capacity, the 33 public high school students that would be generated by the Presidio could be absorbed by Galileo High School, which has excess space for 57 students (Schools Appendix Table 2).

Final Plan Alternative

As shown in Table 42, the Final Plan Alternative would generate 3,240 Presidio residents at build-out (excluding single room occupancy/dorm rooms residents). This population would result in a total of 125 elementary school students, 63 middle school students, and 86 high school students in the San Francisco Unified School District (SFUSD). The Final Plan Alternative would generate 77 more elementary students, 39 more middle school students, and 53 more high school students than the No Action Alternative (GMPA 2000) (Table 43). For SFUSD elementary and middle schools serving the Presidio (Schools Appendix Table 2), there would be no impact, because their capacity exceeds the number of public elementary and middle school students that the Presidio would generate. However, the additional high school students would exceed the capacity of Presidio-serving high schools by 29 students, including Galileo High. Mitigation identified in this EIS, requiring

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that the Trust collaborate with the School District to find space for these students, would reduce this impact.

Final Plan Variant

As shown in Table 42, the Final Plan Variant would generate 2,430 Presidio residents at build-out (excluding single room occupancy/dorm rooms residents). This population would result in a total of 93 elementary school students, 47 middle school students, and 64 high school students in the San Francisco Unified School District (SFUSD). The Final Plan Variant would generate 45 more elementary students, 23 more middle school students, and 31 more high school students than the No Action Alternative (GMPA 2000) (Table 43). For SFUSD elementary and middle schools serving the Presidio (Schools Appendix Table 2), there would be no impact, because their capacity exceeds the number of public elementary and middle school students that the Presidio would generate. However, the additional high school students would exceed the capacity of Presidio-serving high schools by 7 students, including Galileo High. Mitigation identified in this EIS, requiring that the Trust collaborate with the School District to find space for these students, would reduce this impact.

Resource Consolidation Alternative

As shown in Table 42, the Resource Consolidation Alternative would generate 2,170 Presidio residents at build-out (excluding single room occupancy/dormitory residents). This population would result in a total of 84 elementary, 42 middle and 58 high school students. This alternative would yield 36 more elementary students, 18 more middle school students, and 25 more high school students than the No Action Alternative (GMPA 2000) (Table 43). For SFUSD elementary and middle schools serving the Presidio, there would be no impact, because their capacity exceeds the number of public elementary and middle school students that the Presidio would generate. However, the additional high school students would exceed the capacity of Presidio - serving high schools by 1 student, including Galileo High (Schools Appendix Table 2). Mitigation identified in this EIS, requiring that the Trust collaborate with the School District to find space for these students, would reduce this impact.

Sustainable Community Alternative

As shown in Table 42, the Sustainable Community Alternative would generate 2,970 Presidio residents at build-out (excluding single room occupancy/dorm room residents). This population would result in 114 elementary, 58 middle, and 79 high school students, which would be 66 more elementary students, 34 more middle school students, and 46 more high school students than the No Action Alternative (GMPA 2000) (Table 43). For SFUSD elementary and middle schools serving the Presidio (Schools Appendix Table 2), there would be no impact, because their capacity exceeds the number of public elementary and middle school students that the Presidio would generate. However, the additional high school students would exceed the capacity of Presidio-serving high schools by 22 students, including Galileo High. Mitigation identified in this EIS, requiring that the Trust collaborate with the School District to find space for these students, would reduce this impact.

Cultural Destination Alternative

As shown in Table 42, this alternative would generate 3,580 Presidio residents at build-out (excluding single room occupancy/dorm room residents). This population would result in 138 elementary, 69 middle and 95 high school students, which is 90 more elementary students, 45 more middle school students, and 62 more high school students than the No Action Alternative (GMPA 2000) (Table 43). For SFUSD elementary and middle schools serving the Presidio (Schools Appendix Table 2), there would be no impact, because their capacity exceeds the number of public elementary and middle school students that the Presidio would generate. However, the additional high school students would exceed the capacity of Presidio-serving high schools by 38 students, including Galileo High. Mitigation identified in this EIS, requiring that the Trust collaborate with the School District to find space for these students, would reduce this impact.

Minimum Management Alternative

As shown in Table 42, the Minimum Management Alternative would generate approximately 2,790 Presidio residents at build-out (excluding single room occupancy/dormitory residents). This population would result in 107

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elementary, 54 middle and 74 high school students, which is 59 more elementary students, 30 more middle school students, and 41 more high school students than the No Action Alternative (GMPA 2000) (Tables 43). For SFUSD elementary and middle schools serving the Presidio, there would be no impact because their capacity exceeds the number of public elementary and middle school students generated by the Presidio. However, the additional high school students would exceed the capacity of Presidio-serving high schools by 17 students, including Galileo High. Mitigation identified in this EIS, requiring that the Trust collaborate with the School District to find space for these students, would reduce this impact.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS does not contain mitigation for schools.

New Measures

The following mitigation measure would apply to all alternatives except No Action Alternative (GMPA 2000).

CO-3 *Collaboration with SFUSD.* The Trust would make all reasonable efforts to collaborate with SFUSD to locate necessary space for students residing at the Presidio and continue to participate in the Federal Impact Aid program.

4.4.4 VISITOR EXPERIENCE

Each alternative was analyzed for potential impacts on visitor experience, including visitor orientation, interpretation, public access, park tenants, and events and cultural programs.

METHODOLOGY

The focus of the analysis in this section is on how the various alternatives will affect the experience of park visitors. The analysis focuses on visitor orientation, interpretation and educational opportunities, public access, park

tenants, and events and cultural programs. The changes in open space under each alternative are noted, as are the number of projected park visitors in the year 2020. Projected visitation considers both Areas A and B, and like the GMPA EIS analysis, is based on information stemming from the transportation model developed in support of this EIS (Wilbur Smith Associates, 2002). The City and County of San Francisco Planning Department's *Transportation Impact Analysis Guidelines, Interim Edition* (January 2000) was used to help identify visitor generation percentages for a variety of land uses that would generate recreational visitorship. These factors were then applied to projected trips associated with these land uses to predict future visitation. Different mixes of land uses in each alternative yielded a distinct estimate of visitation for each. For additional discussion of the methodology, please refer to responses to comments on the visitor experience in EIS Volume II, and Section 3.7 of the *PTMP Background Transportation Report* (Wilbur Smith Associates, 2002).

POTENTIAL IMPACTS

IMPACTS ON VISITOR EXPERIENCE

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000) there would be a variety of programs and interpretive and educational opportunities within the Presidio. The William Penn Mott, Jr. NPS visitor center would continue to house a variety of interpretive services and media, and would provide enhanced visitor programs and services as funding permits. In accordance with the Trust Act, the NPS would carry out interpretation and education activities at the Presidio in cooperation with the Trust and park tenants. Other existing facilities and sites used for purposes of interpretation and delivering visitor information would continue in operation, and some additional visitor information and interpretation facilities would be provided in Area B. Interpretation would be provided at several batteries; the former Spanish/Mexican Presidio site and the Marine hospital cemetery would be commemorated. Open space would be expanded by about 99 acres, mostly in the southern part of the park. Thus, park visitorship would be dispersed throughout the park to open space areas such as the shoreline and golf course,

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to the visitor center and other interpretive sites, and the other developed and natural areas.

Existing park-based programs would continue and would benefit the visitor experience. Interpretation and education programs would be provided by the NPS. Any additional visitor programs would be largely created and provided by park tenants. Tenants would provide educational opportunities and develop interpretive and stewardship programs. While this alternative would increase the number and range of programs provided for visitors, the level of programming would depend on the initiative of park tenants; only a base level of funding would be provided by the Trust.

Based on its building and land use characteristics, this alternative would attract approximately 5.2 million recreational visitors annually to Area B. Based upon visitation patterns in the Presidio, peak visitor use would occur primarily on weekend days and holidays with good weather.

Final Plan Alternative

This alternative would provide a greater number and variety of facilities for the visiting public than the No Action Alternative (GMPA 2000). Facilities would be concentrated in the Main Post and Crissy Field Planning Districts. The William Penn Mott, Jr. NPS Visitor Center would continue to house a variety of interpretive services and media. In addition, a variety of museum facilities or other cultural facilities could be developed at the Presidio to serve local, national, and international visitors. A major museum may be located at the Commissary of an alternate site in the Crissy Field (Area B) planning district to complement existing facilities and programs there. Other Crissy Field buildings may be used for visitor facilities, such as rehabilitated historic hangars. Small and large cultural facilities and visitor amenities could also be located at the Main Post. In addition, a new Center for Sustainability may be developed to demonstrate sustainable practices to park visitors.

Under the Trust Act, the NPS would be responsible for carrying out interpretation and education activities at the Presidio in cooperation with the Trust. The Trust would assist the NPS in developing and implementing collaborative interpretive and stewardship programs. The Trust would also facilitate educational opportunities for visitors, and support interpretive

programs, events, and outreach. Park rangers, volunteers, and tenants would organize and lead visitor activities. The Presidio's cultural, natural, and recreational resources, along with facilities renovated for such purposes by the Trust or by tenants, would provide the setting for a range of interpretive and educational programs. To ensure consistency and quality, the Trust would play a role in the coordination of programs; and would provide an increasing level of financial support over time. Program quality and quantity would also benefit from and philanthropic support.

The Trust, in cooperation with the NPS, would provide easily accessible orientation and information. Information/ orientation kiosks and outdoor recreational panels would be installed at key points in Area B. The wayside signage program would be completed. The jointly-developed Presidio interpretation strategy would also be completed. Future site planning would further refine and identify visitor activity and interpretation facility improvements.

Access to the Presidio and its facilities would be enhanced. To the maximum extent possible, solutions to barriers confronting visitors and Presidio employees with mobility and other impairments would be developed. Access improvements would conform to the requirements of the Uniform Federal Accessibility Standards. The Trust would work collaboratively with the NPS to assure publications and programs would be designed to be accessible to individuals with special needs, including information for foreign visitors and visitors with sight, hearing, mental, and mobility impairments. Public access to portions of important historic buildings would be maintained and complemented by interpretive displays. Open space would be expanded by 99 acres, and park visitors would be dispersed throughout the park.

Based on its building and land use characteristics, this alternative would attract approximately 7.2 million recreational visitors annually to Area B. Based upon visitation patterns in the Presidio, peak visitor use would occur primarily on weekend days and holidays with good weather. On these days, visitors desiring solitude or a more contemplative experience would need to seek these experiences in less developed areas of the park. Mitigation measures identified in this EIS would ensure that visitation levels would not

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exceed desired conditions, and that unacceptable impacts to park resources and visitor experiences would not occur.

Final Plan Variant

Under the Final Plan Variant, the improvements to interpretation and educational programs, cultural programs, visitor amenities, and access and visitor orientation would be similar to the No Action Alternative (GMPA 2000). The base level of funding for programs would also be the same. The Final Plan Variant would differ from the No Action Alternative (GMPA 2000) primarily in its proposed allocation of land uses which are more closely modeled after the Final Plan Alternative.

Visitor facilities and program-related uses would primarily be located at the Main Post, Crissy Field and Fort Scott. In contrast to the No Action Alternative (GMPA 2000), less space would be provided at the Main Post for cultural and educational uses, and more built space would be made available on Crissy Field (Area A). Open space would be expanded by 124 acres, or about 25 acres more than the No Action Alternative (GMPA 2000). Park visitorship would be dispersed throughout the park.

The assumptions about the role of tenants in program delivery and the funding for programs would be the same as the No Action Alternative (GMPA 2000). Interpretation and educational programs would be provided by the NPS. Any additional visitor programs would be largely created and provided by park tenants.

Based on building and land use characteristics, this variant would attract approximately 5.9 million recreational visitors annually to the Presidio. Mitigation Measures identified in this EIS would ensure that visitation levels would not exceed desired conditions, and that unacceptable impacts to park resources and visitor experiences would not occur.

Resource Consolidation Alternative

This alternative would provide less variety of visitor facilities for the public than the No Action Alternative (GMPA 2000). Visitor facilities would be centered on the Main Post and Crissy Field Planning Districts, with more

emphasis on the restored areas of the South Hills Planning District. The William Penn Mott Jr. NPS Visitor Center would continue to provide visitor orientation and interpretation services and the NPS would continue to provide the lead in interpretation to the public. The main focus for visitor experience would be on environmental stewardship and preservation activities. Some museum spaces could be dedicated to visitors under this alternative; however, interpretation and visitor services would receive more focus in the restored open space areas of the South Hills Planning District than in the No Action Alternative (GMPA 2000). A new Center for Sustainability would be established and be a key visitor facility under this alternative.

This alternative would provide programs focused more on resource protection and sustainability education than on arts, culture, or history. Funding levels would exceed those under the No Action (GMPA 2000) and Final Plan Alternatives. The NPS would continue to have the lead in providing interpretive programming. The Trust would provide expanded educational and other programmatic opportunities to visitors to supplement the efforts of the NPS. Mission-related tenants would provide a small number of programs.

Programs would focus on instilling great understanding and awareness of park resource values. More emphasis would be placed on stewardship projects and programs related to sustainable practices. New programs would be created in the restored South Hills Planning District, where open space would be expanded substantially. Overall, open space would increase by 143 acres, or 44 acres more than the No Action Alternative (GMPA 2000). Park visitorship would be dispersed throughout the park.

Based on its building and land use characteristics, this alternative would attract approximately 7.0 million recreational visitors annually to Area B. Mitigation measures identified in this EIS would ensure that visitation levels would not exceed desired conditions, and that unacceptable impacts to park resources and visitor experiences would not occur.

Sustainable Community Alternative

This alternative would provide less variety of visitor facilities for the public than the No Action Alternative (GMPA 2000). The Main Post and Crissy Field Planning Districts would be centers for visitor activities. The NPS

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would continue to have the lead in providing interpretation services, and the William Penn Mott, Jr. NPS Visitor Center would continue as the main contact point for visitor orientation and education. Visitor services would continue to serve national and international audiences; however, facilities and programs would have more emphasis on serving local visitors and residents of the Presidio. Some museum spaces dedicated to Presidio-related themes and stories would be provided, although less emphasis would be placed on providing museums to attract national and international visitors.

The number and range of programs provided for visitors would be greater under this alternative than the No Action Alternative (GMPA 2000). Funding levels would exceed those under the No Action and the Final Plan Alternative. The NPS would continue to have the lead in providing interpretive programming. The Trust would expand program offerings by developing educational and other cultural activities for visitors and for the community. Mission-related tenants would continue to provide a small number of programs for visitors and the Presidio community.

Under this alternative, the focus for these visitor programs would be to serve community-based residents and local visitors. Stewardship opportunities, some arts and entertainment programs, and additional active recreational facilities would enhance livability and visitor attraction. Open space would increase by 77 acres or less than the No Action Alternative (GMPA 2000). Park visitors would be dispersed throughout the park.

Based on building and land use characteristics, this alternative would attract approximately 8.2 million recreational visitors annually to Area B. Mitigation measures identified in this EIS would ensure that visitation levels would not exceed desired conditions and that unacceptable impacts to park resources and visitor experiences would not occur.

Cultural Destination Alternative

This alternative would provide a greater variety of visitor facilities for the visiting public than the No Action Alternative (GMPA 2000) or any other. Visitor activity would be concentrated in the Main Post and Crissy Field Planning Districts. The William Penn Mott, Jr. NPS Visitor Center would continue to house a variety of interpretive services and media. In addition, a

variety of museum facilities could be developed at the Presidio to serve local, national, and international visitors. A major museum may be located on the northern end of Area B in the Crissy Field Planning District to complement existing facilities and programs there. Other Crissy Field buildings might be used for visitor facilities, such as rehabilitated historic hangars. Small and large museums could also be located at the Main Post, related to themes of cultural heritage, immigration and exploration, the West Coast's technological innovation, and the Presidio's dynamic natural environment. In addition, a Center for Sustainability would become a new visitor facility demonstrating sustainable practices to park visitors.

This alternative would have a greater number of programs for visitors than other alternatives, and the Trust would provide the highest level of funding under this alternative. Open space would increase by 112 acres, and park visitors would be dispersed throughout the park.

This alternative would attract approximately 7.2 million recreational visitors annually to Area B. Mitigation measures identified in this EIS would ensure that visitation levels would not exceed desired conditions and that unacceptable impacts to park resources and visitor experiences would not occur.

Minimum Management Alternative

Under this alternative, minimal actions would be taken to expand visitor opportunities beyond existing facilities. The William Penn Mott, Jr. NPS visitor center would continue to offer a variety of interpretive services and media. Use of other existing visitor facilities for purposes of interpretation and delivering visitor information would continue. Only minimal additional interpretive or orientation signage would be installed. Leased buildings would not be required to install exhibits pertaining to the Presidio's interpretive themes.

Basic interpretation and education programs would continue, but on a reduced basis. Other programs, such as the pilot "At the Presidio" program, would most likely not occur. Tenant-based public programs would be minimal, as such programs would be encouraged, but not required. Special events may occur, but not to the extent of the other alternatives. Open Space would

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increase by 7 acres, substantially less than with other alternatives. For these reasons, the Minimum Management alternative would provide few benefits to enhance visitor experience.

Based on its building and land use characteristics, this alternative would attract approximately 6.5 million recreational visitors annually to Area B. Mitigation measures identified in this EIS would ensure that visitation levels would not exceed desired conditions and that unacceptable impacts to park resources and visitor experiences would not occur.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS does not include mitigation for visitor experience impacts.

New Mitigation

The following measures would apply to all alternatives except No Action Alternative (GMPA 2000).

CO-4 *Limitations of Visitor Opportunities.* The Trust would limit visitor opportunities to those that are suited and appropriate to the significant natural, historic, scenic, cultural, and recreational resources of the Presidio. Only those visitor activities that are consistent with the Trust Act and appropriate to the purpose for which the park was established would be allowed. The Trust would welcome tenants to provide activities consistent with these requirements.

CO-5 *Prohibitions on Visitor Uses.* The Trust would prohibit visitor uses that would impair park resources or values or would unreasonably interfere with NPS interpretive activities or other existing, appropriate park uses. As future plans are developed for Crissy Field (Area B), the Trust would cooperate with the NPS to the extent practicable to seek consistency with that agency's visitor management policies and procedures and improvements made to Area A. The Trust would also consider the effects on Crissy Field's visitors (Area A) when determining the appropriateness of future visitor activities.

CO-6 *Management Controls.* The Trust would impose management controls on visitor uses, if necessary, to ensure that the Presidio's resources are protected. If an ongoing or proposed activity would cause unacceptable impacts to park resources, adjustments would be made to the way the activity is conducted, including placing limitations on the activity, so as to eliminate the unacceptable impacts. Any restrictions would be based on professional judgment, law and policy, the best available scientific study or research, appropriate environmental review, and other available data. As visitor use changes over time, the Trust would decide if management actions are needed to keep use at acceptable and sustainable levels.

CO-7 *Special Events.* The Trust would require appropriate permit conditions are imposed for special events to ensure that park resources are protected.

CO-8 *Monitoring of Visitor Levels.* The Trust would monitor visitation levels to ensure that park uses would not unacceptably impact Presidio resources, including visitor experience. Visitor carrying capacities for managing visitor use would be identified if necessary.

4.4.5 RECREATION

METHODOLOGY

Each alternative was analyzed for potential impacts on recreational activities and use. Activities range from passive to active and may or may not depend on unique features of the Presidio. Passive recreation includes walking on trails, bird watching, gardening, or picnicking. Active recreation includes ball sports, bicycling, use of indoor recreational facilities, or participating in large group festivities at special events. Activities that depend on the Presidio's unique natural and cultural resources include scenic viewing from overlooks, and participation in stewardship programs. Activities that do not depend on unique resources of the Presidio, and could be accommodated in other locations include court sports, picnic grounds, or playgrounds. Each alternative was then analyzed for its impact on the spectrum of recreational activities at the Presidio. Please refer to the Visitor Experience environmental consequences section for a discussion of impacts on the Presidio's interpretive and educational programs.

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POTENTIAL IMPACTS

IMPACT ON RECREATIONAL ACTIVITIES

No Action Alternative (GMPA 2000)

Existing built recreational facilities, including the swimming pool, bowling center, ballfields, golf course, tennis courts, group camping area, picnic areas, and gymnasiums, would remain open to the public, except those facilities needed to be removed to meet other planning objectives, such as the removal of Morton Street ballfield to accommodate the restoration of Tennessee Hollow. The two ballfields at Fort Scott would be removed and the historic parade ground restored, providing space for large group assembly and improved visual access to the Golden Gate. The tennis court behind the PSH would be relocated. Future use of Pop Hicks ballfield will be determined following completion of a Remediation Investigation/Feasibility Study. Under the No Action Alternative (GMPA 2000), the Rob Hill campground would also be rehabilitated and enhanced. Existing trails would be improved, some existing social trails removed or relocated, and other new trails constructed in accordance with the Presidio Trails and Bikeways Master Plan.

Under this alternative, recreational activities and opportunities would be provided for a wide range of visitors. Passive recreational experiences would be increased and diversified through the creation of new open space areas and through the continued restoration of both remnant natural areas and decadent forest stands. Larger open spaces would be improved for active outdoor activities and informal play. The removal of three ballfields would have an adverse effect on current users, though other facilities would still be available for these types of activities within the park. This alternative would provide a spectrum of recreation opportunities, expand the availability of recreation-related programs, and have an overall beneficial effect.

Final Plan Alternative

Under this alternative, most existing recreation facilities would be retained and enhanced except where removal is needed to meet other planning objectives (such as completion of Doyle Drive, Tennessee Hollow, or

environmental remediation). The Trust would evaluate the potential for additional recreational facilities, and levels of use in balance with other park resource goals. Options for additional built facilities, indoors and outdoors, would be considered. No new forms of recreational activity are being proposed. Future planning efforts will further define compatible recreational activities and locations and will address the potential relocation of existing facilities or construction of new ones, including ballfields.

Consistent with the No Action Alternative (GMPA 2000), two ballfields at Fort Scott would be removed to restore the historic parade ground, providing an area for large group assembly and enhancing the views of the Golden Gate. The Rob Hill group camping area, picnic areas and smaller fields would be enhanced. Existing trails would be improved, some existing social trails removed or relocated, and other new trails constructed in accordance with the Presidio Trails and Bikeways Master Plan.

The Trust will increase and diversify recreational opportunities through the creation of new open spaces. Under this alternative, recreation activities would be provided for a wide range of visitors. Open space and recreational amenities would be managed to provide settings for both intimate and large-group gatherings. Landscaped areas and small open spaces would be maintained for passive recreation. Larger open spaces would be improved for active outdoor activities and informal play. Passive recreation would be increased and diversified through the creation of new open space areas and through the continued restoration of both remnant natural areas and decadent forest stands.

Final Plan Variant

The Final Plan Variant would have similar impacts on recreation as the No Action Alternative (GMPA 2000) except for the removal of one additional ballfield (Pop Hick's). This would not have an increased impact as the ballfield is currently not in use and its improvement under the No Action Alternative (GMPA 2000) would depend on the outcome of a separate Remedial Investigation/Feasibility Study.

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Resource Consolidation Alternative

Under this alternative, additional emphasis would be placed on providing passive recreational opportunities for stewardship, nature appreciation, and solitude. Impacts on recreation would be similar to the Final Plan Alternative. However, closure of Washington Boulevard to vehicles resulting from the removal of East Washington and West Washington housing would further benefit bicyclists and pedestrians using that area.

Sustainable Community Alternative

This alternative would have similar impacts on recreation as the Final Plan Alternative.

Cultural Destination Alternative

This alternative would have similar impacts on recreation as the Final Plan Alternative.

Minimum Management Alternative

All existing recreational facilities, including athletic fields, playgrounds, tennis courts, hiking and bicycling trails, picnic areas, golf course, bowling alley, and gymnasiums would be retained for public use. No new trails and bikeways would be established. Trail repair and maintenance would only occur as needed to protect resources. Additionally, this alternative would not include any demolition or new construction. Therefore, no loss of buildings or facilities would occur. There would be no significant recreation impact due to the retention of all existing recreational facilities.

There would be little change in the spectrum of recreational activities at the Presidio. A decline in opportunities to participate in stewardship programs would occur, as few areas would be restored. No new recreational programs would be created.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

No measures for recreational activities were identified in the GMPA EIS.

New Mitigation

The following measures would apply to all of the alternatives.

CO-9 *Recreational Use Management Objectives.* The Trust would monitor changing patterns of use and trends in recreational activities, and assess and manage their potential effects on park resources. The Trust would develop and implement specific, measurable visitor management objectives to ensure that recreational uses and activities within Area B could be sustained without impairing park resources or values.

CO-10 *Relocation or Replacement of Recreational Facilities.* Should any recreational facilities need to be relocated in conjunction with other planning objectives, such as through the restoration of Tennessee Hollow or the reconfiguration of Doyle Drive, their relocation or replacement would be pursued during activity- or planning area-specific analyses.

CO-11 *Trail Maintenance and Enhancement.* Upon completion and approval of the Presidio Trails and Bikeways Master Plan, the Trust would implement priorities for trail repair, stabilization and enhancement, and initiate a Trails Stewardship Program to promote public support and interest in trail maintenance and enhancement activities.

4.4.6 PUBLIC SAFETY

METHODOLOGY

Law Enforcement

The Commander of the United States Park Police (USPP) San Francisco Field Office (SFFO), the Assistant Commander for Operations of the USPP San Francisco Field Office, the Assistant Commander for Administration of the

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USPP San Francisco Field Office, and the Administrative Lieutenant of the USPP San Francisco Field Office were presented with data outlining the range of land use, resident, and employee assumptions under the alternatives under consideration in this analysis. In an interview, the USPP staff described the additional resources that would be required under each alternative in order to maintain current service levels.

Fire Protection Emergency Response

The Presidio Fire Department Fire Chief and Assistant Fire Chief were presented with data outlining the range of land use, resident, and employee assumptions under the alternatives being considered in this analysis. In an interview, the Presidio Fire Department Fire Chief and Assistant Fire Chief described the required long-term planning that would be required under each alternative in order to maintain current service levels.

POTENTIAL IMPACTS

INCREASED DEMAND FOR LAW ENFORCEMENT

No Action Alternative (GMPA 2000)

As with many other public services, law enforcement services do not readily change in proportion to changes in population. As the resident and employee populations at the Presidio increase, and calls for police service increase, the USPP would scale up its operations as necessary in order to maintain current service levels. The envisioned level of operations could include a new police station at the Main Post, the establishment of full time desk service (a police station open 24 hours a day with a desk sergeant to manage police activities at the station), and the establishment of a total of four patrol beats in Area B. Increased services could include an additional police substation, station equipment, additional law enforcement vehicles, additional law enforcement personnel, additional dispatchers, additional administrative staff, and additional supplies and equipment for these personnel.

Established police standards call for 4.5 to 5.5 full-time equivalent (FTE) patrol officers per beat per shift (three shifts per day to maintain 24 hour coverage). The establishment of two new 24-hour patrol beats would

necessitate 27 to 33 new general patrol officer positions. Other staffing that would need to expand to serve additional calls include two investigators, one I.D. technician, five desk officers, two motorcycle patrol officers, and one to two horse-mounted patrol officers.

For the No Action Alternative (GMPA 2000), the USPP estimates that the start-up costs for hiring additional personnel, purchasing new vehicles and other equipment, and setting up a police substation (in building space to be provided by the Presidio Trust) could total up to \$752,000. The annual costs for staffing, recruitment, equipment, and supplies are estimated to be as much as \$2.6 million. This cost estimate does not include any of the expenses related to the relocation of the USPP from its current location in Building 1217 to a more suitable location at the Main Post.

The increase in resident and employee population at the Presidio projected in the No Action Alternative (GMPA 2000) would potentially raise the number of calls for police service. Mitigation, which requires that law enforcement services be reviewed and expanded as necessary as development occurs, would ensure that law enforcement services remain at adequate levels.

Final Plan Alternative

As with the No Action Alternative (GMPA 2000), the increase in resident and employee populations at the Presidio projected under the Final Plan Alternative would potentially increase calls for police service. The operational level of service described under the No Action Alternative (GMPA 2000), above, would be needed to serve the increased demand. As with the No Action Alternative (GMPA 2000), law enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

Final Plan Variant

The increase in resident and employee population at the Presidio projected in the Final Variant and the resultant rise in calls for police service would require the operational level of service described under the No Action Alternative (GMPA 2000) above. As with the No Action Alternative (GMPA 2000), law

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enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

Resource Consolidation Alternative

The increase in resident and employee population at the Presidio projected in the Resource Consolidation Alternative and the resultant rise in calls for police service would require the operational level of service described under the No Action Alternative (GMPA 2000) above. As with the No Action Alternative, law enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

Sustainable Community Alternative

The increase in resident and employee population at the Presidio projected in the Sustainable Community Alternative and the resultant rise in calls for police service would require the operational level of service described under the No Action Alternative (GMPA 2000) above. As with the No Action Alternative (GMPA 2000), law enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

Cultural Destination Alternative

The increase in resident and employee population at the Presidio projected in the Cultural Destination Alternative, and the resultant rise in calls for police service would require the operational level of service described under the No Action Alternative (GMPA 2000) above. As with the No Action Alternative, law enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

Minimum Management Alternative

The current level of operational capacity for the USPP is not adequate to serve the Minimum Management Alternative. As with the No Action Alternative

(GMPA 2000), law enforcement services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that law enforcement services remain at adequate levels.

INCREASED DEMAND FOR FIRE PROTECTION AND EMERGENCY RESPONSE

No Action Alternative (GMPA 2000)

As with many other public services, fire protection, and emergency response services do not readily change in proportion to changes in population. Build-out of the No Action Alternative (GMPA 2000) would result in significant increases in resident and employee populations but no significant increase in the square footage of buildings that would need fire protection. Because the increase in population is an important life-safety factor, the Fire Department would have to review and adjust its operations in order to maintain current service levels in order to meet National Fire Protection Association (NFPA) 1500 standards. The Fire Department does not have a long-range plan in place to determine the long-terms needs for fire protection and emergency response, thus additional analysis will be required. This analysis would set forth requirements for adjusting Fire Department operations, and identify any required new facilities and personnel.

The increase over current levels in resident and employee population at the Presidio projected in the No Action Alternative (GMPA 2000) would increase the number of calls for fire protection and emergency response. Fire protection and emergency response services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that fire protection services remain at adequate levels.

All Remaining Alternatives

As with the No Action Alternative (GMPA 2000), the increase in resident and employee populations at the Presidio projected under each of the remaining alternatives would increase calls for fire protection and emergency response. The operational level of service described under the No Action Alternative (GMPA 2000), above, could be needed to serve an increase in demand. As with the No Action Alternative, fire protection and emergency response

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services would need to be reviewed and expanded as necessary as PTMP is implemented to ensure that fire protection services are provided at adequate levels.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS does not contain mitigation for law enforcement, fire protection, or emergency services.

New Mitigation

The following mitigation measure would apply to all alternatives.

CO-12 *Expansion of Public Safety Services.* As PTMP is implemented, the Trust would work with USPP and NPS public safety service providers to review public safety service standards set forth in the Presidio Public Safety Analysis (NPS 1994) and identify any appropriate increases in staff, equipment, and facilities in order to maintain adequate services. The Trust would work jointly with NPS to study and identify appropriate locations for USPP and NPS public safety facilities.

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4.5 TRANSPORTATION AND CIRCULATION

4.5.1 METHODOLOGY

The analysis of transportation impacts is based on information included in the 1994 Presidio Transportation Planning and Analysis Technical Report NPS 1994b which analyzed the potential environmental effects from implementation of the GMPA. The analysis of potential effects that would result from the PTMP is summarized in this section, based upon the PTMP Background Transportation Report (Wilbur Smith Associates, 2002). In general, transportation impact assessment is based on the ability of the proposed transportation system to adequately accommodate the expected number of parked vehicles, vehicular traffic, transit passengers, pedestrians, bicyclists, and construction vehicles in the Presidio.

To estimate future traffic conditions for the year 2020, key assumptions had to be developed, and then incorporated into estimates of travel demand and trip generation to determine potential transportation impacts. These key assumptions are summarized below.

PRESIDIO LIVE/WORK MODEL

Based on the Trust's live/work model and the mix of land uses provided for each alternative, it was assumed that:

- Most of the employed residents living in the Presidio would also work within the Presidio;
- Persons employed within the Presidio could walk, bike, or ride the internal shuttle service to destinations within the Presidio; and
- Trips internal to the Presidio would be more likely to be made by non-automobile modes.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Implementation of a Transportation Demand Management (TDM) program would improve transit, pedestrian, and bicycle conditions and would thereby

reduce auto usage to Presidio destinations. The transportation demand management strategies that are assumed to be common for all alternatives include:

- Mandatory participation and commitment to trip-reduction requirements by all non-residential tenants;
- A clean-fuel shuttle bus serving the entire Presidio with direct connections to San Francisco Municipal Railway (Muni) and Golden Gate Transit (GGT) routes, including connections at a centrally-located transit hub;
- On-site sale of transit passes;
- Transit and ridesharing information disseminated on kiosks within the Park, the Trust's website, and employee orientation programs;
- Mandatory event-specific TDM programs for all special events;
- Periodic monitoring of traffic volumes and mode choice among Presidio residents and employees;
- Express bus service to regional transit connections (e.g., BART, Transbay Terminal);
- Secured bicycle parking; and
- Parking Management Program.

In addition, as part of the TDM Program, a series of additional parking management measures would be implemented to reduce parking demand in the Presidio under the action alternatives (Final Plan, Final Plan Variant, Resource Consolidation, Sustainable Community, and Cultural Destination). These measures would, in part, avoid adverse parking conditions in adjacent city neighborhoods by further reducing the number of vehicles in need of parking. These additional measures would include:

- A constrained supply of parking spaces within the Presidio; and
- A parking regulation and fee program.

The TDM program consists of components that can be implemented and meet or exceed the intended traffic reductions. Expected reductions were used in calculating the potential impact of future vehicular traffic in the park and surrounding areas. The TDM traffic reductions used in the transportation analyses reflect the Trust's minimum performance standards. Since traffic

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reductions are likely to exceed what has been incorporated here, the traffic forecasts can be considered somewhat conservative. Furthermore, additional TDM actions will be instituted to achieve additional automobile trip reductions as transit service and other alternative transportation is expanded.

FUTURE TRAVEL DEMAND FORECASTS

The San Francisco County Transportation Authority (SFCTA) countywide travel demand forecasting model was used to develop the travel forecasts for cumulative development and growth through the years 2020 in the region, as well as to determine travel demand to and from the Presidio for the various alternatives. This approach results in a cumulative impacts assessment for year 2020 conditions that takes into account both the future development expected at the Presidio, as well as the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area.

The most up-to-date version of the SFCTA countywide model estimates future traffic and transit travel demand for the entire nine-county Bay Area region based on land use and employment forecasts prepared by the San Francisco Planning Department for the County plus regional growth estimates developed and adopted by the Association of Bay Area Governments (ABAG) in 1998 (Projections '98) for the remainder of the Bay Area region. The SFCTA model divides the entire Bay Area region into approximately 1,750 geographical areas, known as Transportation Analysis Zones (TAZs); about 800 of them are within San Francisco, 30 in the Presidio.

The SFCTA model estimates the future travel demand for each TAZ, determines the origin and destination and mode of travel (auto, transit, or other) for each trip, and assigns those trips to the transportation system (roadway network and transit lines). The SFCTA model was used to characterize the "without project" condition, by identifying the future background (non-Presidio related) growth in travel demand, plus the potential for travel growth that might occur in Area A of the Presidio, as well as possible changes in travel patterns for pass-through (or cut-through) traffic.

The SFCTA model has been developed as a tool to forecast future traffic volumes on major regional traffic facilities such as the Golden Gate Bridge,

Lombard Street, Park Presidio Boulevard, or on major local streets. It is not designed to provide accurate traffic forecasts on local streets at the block-by-block level, nor to forecast turning movements at intersections, which are necessary to determine future intersection operating conditions. Therefore, a subsequent step was undertaken to derive future travel related to Area B of the Presidio.

In the second step, the land use components of the various alternatives were quantified by planning district, and used as input to estimate the Area B transportation impacts on the surrounding transportation network on a daily basis, as well as during typical weekday a.m. and p.m. peak commute hours. Travel demand associated with each land use was calculated for each of the 26 TAZs within Area B, based on standard daily, a.m. and p.m. trip generation rates. Person trips generated and attracted by Area B were distributed to eight different geographical origin/destination areas, including four San Francisco areas and three other regions in the Bay Area based on information supplied by the San Francisco Planning Department or obtained from the SFCTA model. The mode split analysis then determined the portion of these trips made via automobile, transit, or other mode of transportation, based upon the origin/destination of the trips, their purpose, and the availability of various travel modes. Finally, automobile occupancy rates were applied, to yield the average number of individuals in a vehicle, and thus, determine the number of vehicles that would be traveling to and from Area B of the Presidio.

Based upon the future traffic conditions in the vicinity of the Presidio (as estimated by the SFCTA model) and the additional vehicle trips that would result for a given Area B alternative (based on trip generation for each land use), vehicles were then assigned to individual streets within and adjacent to the Presidio. These future traffic volumes were used in the analysis of future traffic operating conditions for each alternative.

TRAVEL DEMAND

Table 44 presents the projected daily, a.m. peak hour and p.m. peak hour travel demand estimates for typical weekday conditions for the seven alternatives being analyzed for transportation impacts. Daily and peak hour travel demand would vary by alternative, depending on the land use elements contained in the alternatives and the intensity of use. The number of weekday

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daily person-trips would range from 64,221 person-trips for the No Action Alternative (GMPA 2000) to 104,011 person-trips for the Sustainable Community Alternative. In general, approximately nine percent of the daily trips generated by each alternative occur during the a.m. peak hour, and about twelve percent occur during the p.m. peak hour.

The projected travel demand shown in Table 44 represents typical weekday daily, a.m. peak hour and p.m. peak hour conditions. Special events that may take place at the Presidio would attract additional visitors and would result in a greater travel demand than estimated in Table 44.

The transportation modal split for the alternatives reflects implementation of improvements to encourage transit, pedestrian and bicycle modes and discourage single-occupant vehicle travel. The overall modal split (which is the percentage of total trips that would occur via a private vehicle, transit, bicycle, or as a pedestrian) would vary by alternative. For the action alternatives, the modal split would be approximately 64 percent by auto, 19 percent by transit, and 17 percent by walking and bicycle. All of the alternatives assume that mode split would vary by location within the Presidio. For example, persons living or working in the Letterman or Main Post Planning District are more likely to use transit than those living or working at the Fort Scott or the South Hills Planning Districts, because of proximity to better transit. For the No Action Alternative (GMPA 2000), the modal split would be 67 percent by auto, 16 percent by transit, and 17 percent by walking and bicycle, while the modal split for the Minimum Management Alternative would be 73 percent by auto, 13 percent by transit, and 14 percent by walking and bicycle.

During the a.m. peak hour, the number of Area B vehicle-trips generated by the alternatives would range from between 3,383 vehicle-trips for the No Action Alternative (GMPA 2000) to 5,267 vehicle-trips for the Minimum Management Alternative. During the p.m. peak hour, vehicle-trips would range from 3,684 vehicle-trips under the No Action Alternative (GMPA 2000) to 5,962 vehicle-trips for the Sustainable Community Alternative. Tables 1 and 2 of Appendix G show a.m. and p.m. peak hour person trips by mode of travel and by planning district.

4.5.2 ROADWAY NETWORK

In general, the existing roadway network within the Presidio would be maintained. Minor improvements to the roadway network were assumed, including opening the 14th Avenue gate, and converting the 14th Avenue and 15th Avenue gates to a one-way couplet, with 14th Avenue accommodating inbound traffic and the 15th Avenue gate accommodating outbound traffic. In addition, as outlined in the GMPA Background Transportation Report (Peccia 1994), Halleck Street was assumed to be realigned at its southern end so that it connects with Lincoln Boulevard at Anza Avenue.

There have been a number of studies conducted by the City and County of San Francisco and Caltrans on the need for reconstructing Doyle Drive. These efforts include the Doyle Drive Task Force Study (February 1991), a Caltrans Project Study Report (Caltrans 1993), and the Doyle Drive Intermodal Study (San Francisco Guideway Associates 1996), which identified need and developed design alternatives and preliminary cost estimates for the reconstruction of Doyle Drive. Preliminary concepts include the replacement of the current structure with a parkway built to Caltrans standards that would provide direct vehicular access to the Presidio. In addition, multimodal access into and out of the Presidio was proposed through a "transit center" that would be accessed by GG, Muni, and the Presidio internal shuttle. An Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) is currently underway, with publication of the draft document planned for the fall of 2001 for preliminary engineering and design documents representing 30 percent design completion. The current schedule calls for selection of a preferred alternative in late 2002. For the purposes of this analysis, it is assumed that, as part of the proposed Doyle Drive Environmental and Design Study, a grade-separated interchange with Doyle Drive would provide access to and from the Presidio at Girard Road, near the Main Post and Letterman Planning Districts under all alternatives. The direct connection to Doyle Drive would relieve some of the congestion at the Lombard Street gate. Due to the limited capacity of the left-turn movement from Lombard Street to Lombard Street, the Doyle Drive access would become a primary entrance into the Presidio, with the Lombard Gate generally serving as a secondary entrance. The Girard Road interchange is included in all Doyle Drive alternatives.

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Table 44: Estimated Trip Generation (a) by Travel Mode Weekday Daily, A.M. and P.M. Peak Hour

	GMPA 2000	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Daily Person Trips (b)							
Auto	43,154	59,396	48,161	56,903	66,920	63,506	61,498
Transit	10,340	17,300	13,556	17,062	19,054	19,092	11,213
Other(c)	10,727	16,421	12,761	15,511	18,037	18,398	11,575
Total Person-Trips	64,221	93,117	74,478	89,476	104,011	100,996	84,286
Vehicle-Trips(d)	33,822	44,407	36,451	44,204	50,331	47,999	49,519
A.M. Peak Hour Person-Trips							
Auto	4,142	4,909	4,267	5,281	5,530	5,349	6,284
Transit	997	1,432	1,231	1,603	1,591	1,603	1,196
Other	986	1,362	1,144	1,430	1,485	1,525	1,202
Total Person-Trips	6,125	7,703	6,642	8,314	8,606	8,477	8,682
Vehicle-Trips	3,383	3,849	3,401	4,341	4,371	4,250	5,267
P.M. Peak Hour Person-Trips							
Auto	4,676	7,151	5,750	6,745	7,895	7,584	7,030
Transit	1,122	2,097	1,621	2,037	2,259	2,293	1,284
Other	1,154	1,979	1,518	1,835	2,122	2,195	1,316
Total Person-Trips	6,952	11,227	8,889	10,617	12,276	12,072	9,630
Vehicle-Trips	3,684	5,367	4,373	5,266	5,962	5,754	5,722

Source: Wilbur Smith Associates, 2002.

Notes:

- (a) Includes inbound and outbound trips
- (b) Person-trips refer to trips made by all modes
- (c) Other includes walk, bicycle and other modes
- (d) Vehicle trips calculated by dividing the auto person trips by the average number of persons per vehicle.

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It should be noted that, as an interim improvement prior to the completion of the Doyle Drive Reconstruction Project, access to the Letterman Planning District will be improved by reconfiguring the existing intersection on Richardson Avenue in the vicinity of the Presidio's Gorgas Gate. The Trust has prepared and submitted to Caltrans a combined Project Study report/Project report (PSR/PR) for their review and approval. The recommended alternative in the PSR/PR calls for the intersection of Gorgas Avenue and Richardson Avenue to be reconfigured to provide outbound movements. A northbound left-turn movement will be accommodated by a left-exit slip ramp from Richardson Avenue passing beneath the marina Viaduct southbound exit ramp structure and intersecting with Gorgas Avenue. The existing roadway between Gorgas Avenue and Lyon Street would be reconstructed as a one-way roadway heading towards Lyon Street.

POTENTIAL IMPACTS

Increased Congestion on Local Roadways

Future 2020 traffic volumes were developed for each of the alternatives at all study intersections, which include the gateways to the Presidio. In addition to anticipated growth in vehicles traveling to and from the Presidio, regional growth throughout San Francisco and the greater Bay Area is expected to contribute to increase traffic on roadways near the Presidio. As traffic volumes on these roadways increase and the roadways surrounding the Presidio become more congested, more drivers are expected to choose to drive through the Presidio to get to and from other parts of San Francisco and Marin County. One of the primary pass-through routes in the Presidio today is between the Presidio Boulevard and Lombard Street gates. A substantial change in this particular pass-through traffic volume is not expected. However, due to the expected growth in regional traffic volumes, pass-through traffic would increase between the Golden Gate Bridge and the 25th Avenue, Arguello Boulevard and Presidio Boulevard gates.

Table 45 presents the p.m. peak hour traffic volumes at the Presidio gates for existing (2000) and future (2020) conditions, which includes both entering and exiting traffic. Weekday p.m. peak hour volumes through the gateways would increase from 5,967 vehicles per hour in 2000, to between

8,369 (No Action Alternative) and 10,536 (Sustainable Community Alternative) vehicles per hour, an increase of between 41 and 77 percent.

The Presidio Avenue, Lincoln Boulevard/25th Avenue, Arguello Boulevard, Lombard Street, Mason Street, and Plaza East gates would have the greatest traffic volumes during the p.m. peak hour. The greatest increase in traffic volumes from existing conditions is anticipated to occur at the Presidio Avenue, Lincoln Boulevard/25th Avenue, and the Plaza East gates. The new gateway provided as part of the reconstruction of Doyle Drive would also accommodate a substantial portion of the additional trips generated by the alternatives.

Based on the future projected traffic conditions, and the estimated traffic volumes for each of the alternatives, the future 2020 traffic operating conditions were calculated for the study intersections, as shown in Tables 46 and 47 for a.m. and p.m. peak hour conditions, respectively.

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would generate 33,822 daily vehicle trips. The growth in traffic would increase congestion at study intersections. As shown in Tables 46 and 47, of the 37 studied intersections, seven would operate at unacceptable levels (LOS E or F) under the No Action Alternative (GMPA 2000) during the a.m. peak hour, and 13 during the p.m. peak hour. The poor operating conditions at these intersections reflect the increase in traffic volumes traveling to and from the land uses in Area B of the Presidio, as well as relatively modest increases in traffic traveling to and from Area A and expected increases in pass-through traffic resulting from regional traffic growth.

The intersections that would operate at an unacceptable level of service under the No Action Alternative (GMPA 2000) are:

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Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Lyon/Lombard	X	X
Lombard/Presidio	X	X
Presidio/Pacific		X
Lincoln/25 th /El Camino del Mar	X	X
Lincoln/Bowley/Pershing		X
Lincoln/Merchant		X
Lincoln/Golden Gate Bridge Viewing Area	X	X
Park Presidio/Lake		X
Park Presidio/California		X
14 th /California		X
Lincoln/Girard	X	X
Presidio/Jackson	X	X
Presidio/Washington	X	X

All of these study intersections, except for the three intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Street/Pershing Drive, could be mitigated to an acceptable level of service (LOS D or better) through improvements identified in the GMPA EIS, or additional mitigation measures identified for this analysis, as described in the mitigation section of this chapter and summarized in Table 48.

The intersections of Park Presidio Boulevard/Lake Street and Park Presidio Boulevard/California Street are expected to operate at LOS E and F, respectively, during the p.m. peak hour. The No Action Alternative (GMPA 2000) would be expected to contribute less than two percent to the total p.m. peak hour traffic volumes at these two intersections, well within the range of daily traffic variations, which would indicate that the anticipated poor operating conditions at these two intersections would be primarily due to overall regional traffic growth. Both intersections are currently signalized, and left turns are restricted from both directions of Park Presidio Boulevard. Neither intersection could be feasibly mitigated as an at-grade intersection. Due to regional growth, an 11 percent increase in p.m. peak hour traffic volumes is expected at these intersections between now and 2020. If this level of growth does not occur because of traffic flow constraints at the Golden Gate Bridge or improvements to Doyle Drive

resulting in the diversion of traffic from Park Presidio Boulevard to Doyle Drive, the intersections may operate at a better LOS. These potential traffic flow constraints are being evaluated in the Doyle Drive EIS/EIR.

The intersection of Lincoln Boulevard/Bowley Street/Pershing Drive would experience a decrease in traffic volumes as a result of the removal of Wherry housing; however, approximately 18 vehicles per hour would still travel on the intersection minor (STOP sign controlled) approaches during the p.m. peak hour. These vehicles would experience substantial delays as a result of the higher volume of vehicles traveling along Lincoln Boulevard, which are not required to stop. Because of the relatively low volume of traffic on Bowley Avenue (approximately one percent in the p.m. peak hour) compared to Lincoln Boulevard, the intersection does not meet the minimum warrants for signalization. The intersection could still be signalized because of other considerations such as pedestrian movements or accident rates.

It should be noted that the intersections of 14th Avenue with California Street, Presidio Avenue with Pacific Avenue, Lyon Street with Lombard Street, Lincoln Boulevard with 25th Avenue, Presidio Avenue with Jackson Street, and Presidio Avenue with Washington Street are in the City of San Francisco, so improvements at these six intersections would be beyond the jurisdiction of the Trust.

This alternative also includes implementation of a TDM program, an internal shuttle system, coordination with local transit providers and other strategies intended to reduce automobile use, which could decrease the actual number of daily trips generated by this alternative, so that the impacts on local intersections would be reduced.

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Table 45: Presidio Gateways Traffic Volume Summary Year 2000 and 2020 - Weekday P.M. Peak Hour

Gate	Existing Conditions (2000)	No Action (GMPA 2000)	2020					
			Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Mason St.	456	519	818	606	951	957	908	856
Gorgas Ave.	196	207	221	217	238	220	222	214
Lombard St.	1,260	1,005	1,198	1,103	1,156	1,307	1,193	1,315
Presidio Ave.	1,002	1,537	1,668	1,530	1,685	1,787	1,716	1,717
Arguello Blvd.	815	968	1,334	1,149	1,240	1,553	1,378	1,472
14 th /15 th Ave.	107	231	548	314	61	343	529	536
Lincoln Blvd./25 th Ave.	1,072	1,482	1,612	1,649	1,625	1,730	1,548	1,796
Plaza West	325	555	555	555	555	555	555	555
Plaza East	734	1,074	1,074	1,074	1,074	1,074	1,074	1,074
Doyle Drive	0	791	924	799	1,050	1,010	1,002	937
Total	5,967	8,369	9,952	8,996	9,835	10,536	10,125	10,472
Cut through traffic (%)	35%	51%	43%	47%	44%	40%	42%	41%

Source: Wilbur Smith Associates, 2002.

Notes:

Includes inbound and outbound vehicle trips.

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Table 46: Year 2000 and 2020 Intersection Levels of Service – A.M. Peak Hour

	Existing Conditions (2000)	No Action (GMPA 2000)	2020					
			Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
1. Lombard/Richardson	A	A	A	A	A	A	A	A
2. Lyon/Lombard	E	F/B	F/B	F/B	F/B	F/B	F/B	F/B
3. Francisco/Richardson	B	D	D	C	D	D	D	D
4. Gorgas/Lyon/Francisco	B	D	D	D	D	D	D	D
5. Doyle/Marina/Lyon	A	A	A	A	A	A	A	A
6. Mason/Marina/Lyon	A	B	B	B	B	B	B	B
7. Lincoln/Halleck	B	A	A	A	A	A	A	B
8. Presidio/Funston	A	A	A	A	B	B	A	B
9. Letterman/Presidio/Lincoln	A	C	C	C	D	C	C	D
10. Lombard/Presidio	D	F/B	F/B	F/B	F/B	F/B	F/B	F/B
11. Presidio/Pacific	B	D/B	D/B	D/B	E/B	E/B	E/B	E/B
12. Arguello/Jackson	B	B	C/A	B	C/A	C/A	C/A	C/A
13. Washington Boulevard/Arguello	A	B	B	B	B	B	B	B
14. Arguello/Moraga	A	B	B	B	B	B	C	B
15. Graham/Moraga	A	B	B	B	B	B	B	B
16. Sheridan/Montgomery	A	A	B	A	C	C	A	B
17. Lincoln/Sheridan	B	B	B	B	B	B	B	B
18. Lincoln/Park/McDowell	B	B	B	B	B	C	B	B
19. 14th/Lake	C	D	E/A	D/A	C	D/A	E/A	F/B
20. 15th/Lake	B	C	C	C	C	C	C	C
21. Lincoln/25th/El Camino del Mar	D	F/B	F/C	F/C	F/C	F/C	F/B	F/D
22. Lincoln/Bowley/Pershing	C	D	D	D/D	D	E	D	F
23. Lincoln/Kobbe	C	B	D/A	D/A	B/A	D/A	B/A	F/A
24. Lincoln/Merchant	A	D/C	E/C	E/C	D/C	E/C	D/C	F/D
25. Lincoln/Storey	B	B	C	B	B	B	C	B
26. Lincoln/GGB Viewing Area	C	E/C	E/C	E/C	E/C	E/C	E/C	F/C
27. Lincoln/Graham	B	A	A	A	B	B	B	C
28. Divisadero/Lombard	B	B	B	B	B	B	B	B
29. Park Presidio/Lake	B	B	C	B	B	C	C	D
30. Park Presidio/California	B	B	B	B	B	B	B	B
31. 14th/California	C	D/C	D/C	D/C	D/B	D/C	D/C	F/D
32. 15th/California	C	C	C	C	C	C	C	C
33. 25th/California	B	D	E/B	E/B	E/B	E/B	E/B	F/C
34. Presidio/Jackson	B	E/B	E/B	E/B	E/C	E/C	E/B	E/C
35. Presidio/Washington	C	E/B	E/B	E/B	F/B	F/B	F/B	F/B
36. Arguello/Washington Street	C	D	D/A	D	F/A	E/A	D	E/A
37. Lincoln/Girard	B	F/B	F/B	F/B	F/C	F/B	F/B	F/B

Source: Wilbur Smith Associates, 2002.

Notes:

Unacceptable service levels are shown bold.
Unmitigated LOS/Mitigated LOS

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Table 47: Year 2000 and 2020 Intersection Levels of Service – P.M. Peak Hour

	Existing Conditions (2000)	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	2020		
						Sustainable Community	Cultural Destination	Minimum Management
1. Lombard/Richardson	A	A	A	A	A	A	A	A
2. Lyon/Lombard	D	F/B	F/B	F/B	F/B	F/B	F/B	F/B
3. Francisco/Richardson	B	B	B	B	B	B	B	B
4. Gorgas/Lyon/Francisco	B	B	B	B	B	B	B	B
5. Doyle/Marina/Lyon	B	B	B	B	B	B	B	B
6. Mason/Marina/Lyon	B	B	B	B	C	C	C	C
7. Lincoln/Halleck/Anza	B	A	B	A	B	C	C	D
8. Presidio/Funston	A	C	C	B	D	C	C	C
9. Letterman/Presidio/Lincoln	A	C	D	C	D	E/B	D	D
10. Lombard/Presidio	D	F/B	F/B	F/B	F/B	F/B	F/B	F/B
11. Presidio/Pacific	B	E/A	F/B	E/A	F/B	F/B	F/B	E/B
12. Arguello/Jackson	C	C	E/A	D	E/A	F/A	F/A	F/A
13. Washington Boulevard/Arguello	A	B	B	B	B	B	C	B
14. Arguello/Moreaga	B	C	C	C	C	C	E/B	B
15. Graham/Moraga	A	A	B	A	A	B	B	A
16. Sheridan/Montgomery	A	A	D	D	C	C	A	B
17. Lincoln/Sheridan	B	B	B	B	C	B	B	B
18. Lincoln/Park/McDowell	B	B	B	B	B	C	C	B
19. 14th/Lake	C	D	F/A	E/A	C	E/A	F/A	E/A
20. 15th/Lake	B	B	C	B	B	B	C	C
21. Lincoln/25th/El Camino del Mar	D	F/B	F/B	F/C	F/B	F/C	F/B	F/C
22. Lincoln/Bowley/Pershing	C	E	E	E	E	F	E	F
23. Lincoln/Kobbe	C	B	F/A	F/A	F/A	F/A	E/A	F/A
24. Lincoln/Merchant	C	E/B	F/C	F/C	F/C	F/C	F/C	F/B
25. Lincoln/Storey	B	C	C	C	B	B	C	C
26. Lincoln/GGB Viewing Area	C	F/C	F/C	F/C	F/C	F/C	F/C	F/C
27. Lincoln/Graham	A	A	B	B	B	C	B	C
28. Divisadero/Lombard	B	B	B	B	B	B	B	B
29. Park Presidio/Lake	C	E	F	F	E	F	F	F
30. Park Presidio/California	E	F	F	F	F	F	F	F
31. 14th/California	D	E/C	F/C	F/C	E/C	F/C	F/C	F/C
32. 15th/California	C	C	D	C	C	C	D	D
33. 25th/California	B	C	E/B	E/B	D/B	F/B	E/B	F/C
34. Presidio/Jackson	C	F/B	F/C	F/B	F/C	F/C	F/C	F/C
35. Presidio/Washington	C	F/B	F/B	F/B	F/B	F/C	F/B	F/B
36. Arguello/Washington Street	B	C	E/A	D	E/A	F/A	E/A	F/A
37. Lincoln/Girard	B	F/B	E/B	F/B	F/B	F/B	F/B	E/B

Source: Wilbur Smith Associates, 2002.

Notes:

Unacceptable service levels are shown bold.

Unmitigated LOS/Mitigated LOS

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Table 48: Intersection Mitigation Measures and Applicable Alternatives

Mitigated Intersection	Mitigation Number	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Presidio/Pacific	TR-1	P.M.	P.M.	P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Arguello/Jackson	TR-2		P.M.		P.M.	P.M.	P.M.	P.M.
Lincoln/25th/El Camino del Mar	TR-3	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Lombard/Presidio	TR-4	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Lincoln/GGB Viewing Area	TR-6	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Lincoln/Merchant	TR-7	P.M.	A.M./P.M.	A.M./P.M.	P.M.	A.M./P.M.	P.M.	A.M./P.M.
Lincoln/Kobbe	TR-8		P.M.	P.M.	P.M.	P.M.	P.M.	A.M./P.M.
14th/Lake	TR-11		A.M./P.M.	P.M.		P.M.	A.M./P.M.	A.M./P.M.
Lyon/Lombard	TR-12	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Arguello/Moraga	TR-5,13						P.M.	
Letterman/Presidio/Lincoln	TR-14					P.M.		
14th/California	TR-15	P.M.	P.M.	P.M.	P.M.	P.M.	P.M.	A.M./P.M.
25th/California	TR-16		A.M./P.M.	A.M./P.M.	A.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Presidio/Jackson	TR-17	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Presidio/Washington	TR-18	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.
Arguello/Washington Street	TR-19		P.M.		A.M./P.M.	A.M./P.M.	P.M.	A.M./P.M.
Lincoln/Girard	TR-20	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.	A.M./P.M.

Source: Wilbur Smith Associates, 2002.

Notes:

A.M./P.M. – indicates whether mitigation required in a.m. or p.m. peak hour or both.

TR-X = number of applicable mitigation measure. See "mitigation" at the end of this chapter for identified improvements.

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Final Plan Alternative

The Final Plan Alternative is estimated to generate 44,407 daily vehicle trips in 2020, or 31 percent more trips than would be generated by the No Action Alternative (GMPA 2000). As a result, as shown in Tables 46 and 47, the Final Plan Alternative would result in unacceptable service levels (LOS E or F) at the same intersections as the No Action Alternative (GMPA 2000), which is considered the baseline condition (see above for full discussion). The Final Plan Alternative would also result in unacceptable service levels at the following additional intersections:

Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Arguello/Jackson		X
Lincoln/Merchant	X	
25 th /California	X	X
14 th /Lake	X	X
Lincoln/Kobbe		X
Arguello/Washington St.		X

Following mitigation, all of the study area intersections would operate at acceptable levels, except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Street/Pershing Drive. It should be noted that the intersections of 14th Avenue with Lake Street, Arguello Boulevard with Jackson Street, 25th Avenue with California Street and Arguello Boulevard with Washington Street are in the City of San Francisco, so improvements at these intersection would be beyond the jurisdiction of the Trust. This alternative also includes strategies for reducing single-occupancy vehicle trips, which would also further reduce vehicular delays at local intersections.

Final Plan Variant

The Final Plan Variant is estimated to generate 36,451 daily vehicle trips in 2020, or 8 percent more trips than would be generated by the No Action Alternative (GMPA 2000). As a result, as shown in Tables 46 and 47, the Final Plan Variant would result in unacceptable service levels (LOS E or F) at

the same intersections as the No Action Alternative (GMPA 2000), which is considered the baseline condition (see above for full discussion). The Final Plan Variant would also result in unacceptable service levels at the following intersections:

Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Lincoln/Merchant	X	
14 th /Lake		X
Lincoln/Kobbe		X
25 th /California	X	X

Following mitigation, all of the study area intersections would operate at acceptable levels, except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Street/Pershing Drive. It should be noted that the intersections of 14th Avenue with Lake Street and 25th Avenue with California Street are in the City of San Francisco, so improvements at these intersection would be beyond the jurisdiction of the Trust. This alternative also includes strategies for reducing single-occupancy vehicle trips, which would also further reduce vehicular delays at local intersections.

Resource Consolidation Alternative

The Resource Consolidation Alternative is estimated to generate 44,204 daily vehicle trips in 2020, or 31 percent more trips than would be generated by the No Action Alternative (GMPA 2000). As a result, as shown in Tables 46 and 47, the Resource Consolidation Alternative would result in unacceptable service levels (LOS E or F) at the same intersections as the No Action Alternative (GMPA 2000), which is considered the baseline condition, plus the following intersections:

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Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Arguello/Jackson		X
Presidio/Pacific	X	
Lincoln/Kobbe		X
25 th /California	X	
Arguello/Washington St.	X	X

Following mitigation, all of the study area intersections would operate at acceptable levels, except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Avenue/Pershing Drive. It should be noted that the intersections of 25th Avenue with California Street, Arguello Boulevard with Jackson Street, Presidio Avenue with Pacific Avenue and Arguello Boulevard with Washington Street are in the City of San Francisco, so improvements at these intersections would be beyond the jurisdiction of the Trust. This alternative also includes strategies for reducing single-occupancy vehicle trips, which would also further reduce vehicular delays at local intersections.

Sustainable Community Alternative

The Sustainable Community Alternative is estimated to generate 50,331 daily vehicle trips in 2020, or 49 percent more trips than would be generated by the No Action Alternative (GMPA 2000). As a result, as shown in Tables 46 and 47, the Sustainable Community Alternative would result in unacceptable service levels (LOS E or F) at the same intersections as the No Action Alternative (GMPA 2000), which is considered the baseline condition. Under the No Action Alternative (GMPA 2000) the intersection of Presidio/Pacific would have an unacceptable LOS only in the p.m. peak hour, while under the Sustainable Community Alternative it would have unacceptable LOS in both the a.m. and p.m. peak hours. The Sustainable Community Alternative would also result in unacceptable service levels at the following intersections:

Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
14 th /Lake		
Lincoln/Merchant		X
Letterman/Presidio/Lincoln		X
Arguello/Jackson		X
Lincoln/Bowley/Pershing	X	
Lincoln/Kobbe		X
25 th /California		X
Arguello/Washington Street	X	X
Presidio/Pacific	X	

Following mitigation, all of the study area intersections would operate at acceptable levels, except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Avenue/Pershing Drive. It should be noted that the intersections of 14th Avenue with Lake Street, 25th Avenue with California Street, Arguello Boulevard with Jackson Street, Presidio Avenue with Pacific Avenue and Arguello Boulevard with Washington Street are in the City of San Francisco, so improvements at these intersections would be beyond the jurisdiction of the Trust. This alternative also includes strategies for reducing single-occupancy vehicle trips, to the extent of the other alternatives.

Cultural Destination Alternative

The Cultural Destination Alternative is estimated to generate 47,999 daily vehicle trips in 2020, or 42 percent more trips that would be generated by the No Action Alternative (GMPA 2000). As a result, as shown in Tables 46 and 47, the Cultural Destination Alternative would result in unacceptable service levels (LOS E or F) at the same intersections as the No Action Alternative (GMPA 2000), plus the following intersections:

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Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Presidio/Pacific	X	
14 th /Lake	X	X
Arguello/Jackson		X
Arguello/Moraga		X
Lincoln/Kobbe		X
25 th /California	X	X
Arguello/Washington Street		X

Intersection	LOS E or F	
	A.M. Peak Hour	P.M. Peak Hour
Presidio/Pacific	X	
Arguello/Jackson		X
Lincoln/Merchant		X
14 th /Lake	X	X
Lincoln/Bowley/Pershing	X	
Lincoln/Kobbe	X	X
25 th /California	X	X
Arguello/Washington St.	X	X
14 th /California	X	

Following mitigation, all of the study area intersections would operate at acceptable levels, except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Street/Pershing Drive. It should be noted that the intersection of 14th Avenue with Lake Street, Presidio Avenue with Pacific Avenue, Arguello Boulevard with Jackson Street, 25th Avenue with California Street and Arguello Boulevard with Washington Street are in the City of San Francisco, so improvements at these intersections would be beyond the jurisdiction of the Trust. This alternative also includes strategies for reducing single-occupancy vehicle trips, which would also further reduce vehicular delays at local intersections.

Minimum Management Alternative

The Minimum Management Alternative is anticipated to generate 49,519 vehicle trips per day, approximately 46 percent more trips than would be generated by the No Action Alternative (GMPA 2000). As shown in Tables 46 and 47, unacceptable service levels (LOS E or F) would occur at the same intersections as the No Action Alternative (GMPA 2000). The Minimum Management Alternative would also result in unacceptable service levels at the following intersections:

Traffic operations at all these intersections can be improved to acceptable levels through improvements identified under the No Action Alternative (GMPA 2000), and in mitigation that specifically addresses these intersections except for the intersections of Park Presidio Boulevard/Lake Street, Park Presidio Boulevard/California Street and Lincoln Boulevard/Bowley Avenue/Pershing Drive. It should be noted that the intersections of 25th Avenue with California Street, 14th Avenue with Lake Street, Presidio Avenue with Pacific Avenue, Arguello Boulevard with Jackson Street, Arguello Boulevard with Washington Street and 14th Avenue with California Street are in the City of San Francisco, so improvements at these intersections would be beyond the jurisdiction of the Trust. This alternative would not include strategies for reducing single-occupancy vehicle trips, to the same extent as the other alternatives.

4.5.3 PARKING

Table 49 presents a summary of parking demand, as compared to the supply for each alternative. A parking demand and supply summary by planning district is shown in Table 3 of Appendix G. With the exception of the Minimum Management Alternative, each alternative would decrease the existing number of parking spaces within the Presidio to an amount only five percent greater than expected demand, as part of the parking management strategy to discourage single-occupant auto use. Different land uses

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Table 49: Parking Supply and Demand by Alternative¹

	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Supply	7,807	9,165	7,830	8,978	9,790	9,582	11,210
Average Demand	7,436	8,729	7,457	8,550	9,324	9,126	10,354
+Surplus/(Deficit)	371	436	373	428	466	456	856

Source: Wilbur Smith Associates, 2001.

¹ Existing parking supply is estimated to be 11,210 spaces.

Notes:

Average demand is defined as the average parking demand during a peak use time.

Supply was defined as 5% greater than demand for all alternatives except the Minimum Management Alternative, and would be reduced as TDM measures prove effective as part of future site-specific and/or area-wide planning.

experience peak parking demand at different times of the day. Thus, parking demand is based on the highest value of average weekday midday demand, average evening demand and average weekend demand in each planning area. Parking supply for all alternatives except the Minimum Management Alternative reflects 105% of average parking demand. The parking demand estimates and supply account for shared use of parking within a given planning area.

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would provide approximately 7,807 parking spaces, and is estimated to have a demand for about 7,436 spaces, resulting in a surplus of 371 spaces, or five percent. The parking demand would be accommodated within the proposed supply.

Under this alternative, special events would be scheduled and coordinated based on parking availability, and events would be regulated to ensure that supply meets expected demand including demand from Area A of the Presidio. Events requiring large amounts of parking would not be scheduled concurrently with other events or Presidio peak-parking demand periods, if combined parking demand would exceed the available supply within Area B of the Presidio.

Final Plan Alternative

The Final Plan Alternative would generate a demand for about 8,729 parking spaces in 2020, or 17 percent greater than the estimated parking demand generated by the No Action Alternative (GMPA 2000). The Final Plan Alternative would provide approximately 9,165 spaces. The result would be a surplus of 436 spaces, or 5 percent more than the estimated parking demand. The Final Plan commits to reduce the overall supply of parking as part of future site-specific proposals, area-wide planning, which would be subject to additional analysis.

As with the No Action Alternative (GMPA 2000), this alternative would accommodate special events, which could generate periodic additional demand for parking. Mitigation identified in this EIS would ensure that events would be coordinated so that demand would not exceed parking supply.

Final Plan Variant

The Final Plan Variant would generate a demand for about 7,457 parking spaces in 2020, or about the same as the estimated parking demand generated by the No Action Alternative (GMPA 2000). The Final Plan Variant would provide approximately 7,830 spaces. The result would be a surplus of 373 spaces or 5 percent more than the estimated parking demand.

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As with the No Action Alternative (GMPA 2000), this alternative would accommodate special events, which could generate periodic additional demand for parking. Mitigation identified in this EIS would ensure that events would be coordinated so that demand would not exceed parking supply.

Resource Consolidation Alternative

The estimated parking demand for the Resource Consolidation Alternative would be about 8,550 parking spaces, which would be about 15 percent greater than the estimated parking demand for the No Action Alternative (GMPA 2000). The Resource Consolidation Alternative would provide approximately 8,978 parking spaces. This alternative would generate a surplus of 428 spaces, or 5 percent more than demand.

As with the No Action Alternative (GMPA 2000), this alternative would accommodate special events, which could generate periodic additional demand for parking. Mitigation identified in this EIS would ensure that events would be coordinated so that demand would not exceed parking supply.

Sustainable Community Alternative

The estimated parking demand for the Sustainable Community Alternative would be about 9,324 parking spaces, which would be 25 percent greater than the estimated parking demand for the No Action Alternative (GMPA 2000) in 2020. The Sustainable Community Alternative would provide approximately 9,790 parking spaces, a surplus of 466 spaces, or 5 percent more than demand.

As with the No Action Alternative (GMPA 2000), this alternative would accommodate special events, which could generate periodic additional demand for parking. Mitigation identified in this EIS would ensure that events would be coordinated so that demand would not exceed parking supply.

Cultural Destination Alternative

The estimated parking demand for the Cultural Destination Alternative would be about 9,126 parking spaces, which would be 23 percent greater than the estimated parking demand for the No Action Alternative (GMPA 2000) in 2020. The estimated demand would be less than the proposed supply of approximately 9,582 spaces, resulting in a surplus of about 456 spaces, or 5 percent more than demand.

As with the No Action Alternative (GMPA 2000), this alternative would accommodate special events, which could generate periodic additional demand for parking. Mitigation identified in this EIS would ensure that events would be coordinated so that demand would not exceed parking supply.

Minimum Management Alternative

The Minimum Management Alternative would generate a demand for approximately 10,354 parking spaces, (about 39 percent greater than the estimated parking demand for the No Action Alternative) and would maintain existing supply (11,210 spaces), providing an excess of approximately 856 spaces, or 8.3 percent more than demand, which could result in additional vehicle trips traveling to and from the Presidio.

4.5.4 BICYCLE AND PEDESTRIAN CIRCULATION

Implementation of the alternatives would result in an increase in pedestrian and bicycle activity within the Presidio and on streets adjacent to the key gates. Based on the expected modal split for Presidio residents, employees and visitors (see Travel Demand section), under all alternatives, approximately 14 to 18 percent of all trips generated by the land uses are anticipated to occur by walking and bicycling as the primary mode. In addition, persons accessing the Presidio by auto or transit would also walk from transit stops and parking areas.

All of the alternatives, except Minimum Management, assume improvements to the pedestrian and bicycle circulation network throughout the Presidio, consistent with the Presidio Bikeways and Trails Master Plan.

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No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) would generate about 10,700 pedestrian and bicycle trips per weekday, increasing pedestrian and bicycle activity within the Presidio and on streets adjacent to key gates of the Presidio. The increase in pedestrian and bicycle activity would generally be accommodated within the existing pedestrian and bicycle network. Planned improvements to the pedestrian and bicycle network throughout the Presidio would enhance the pedestrian and bicycle environment, and facilitate the safe and direct flow of pedestrians and bicyclists to and from the different parts of the Presidio. These planned improvements will be outlined in the Bikeways and Trails Master Plan, which will guide development of a comprehensive pedestrian and bicycle network throughout the Presidio. Implementation of the Bikeways and Trails Master Plan should ensure that bicycle and pedestrian facilities are adequate to meet the demand generated by this alternative.

Final Plan Alternative

Under the Final Plan Alternative, there would be 16,400 bicycle and pedestrian trips per weekday, 53 percent more trips than under the No Action Alternative (GMPA 2000). The Bikeways and Trails Master Plan would ensure that facilities were developed to accommodate the bicycle/pedestrian demand generated by this alternative.

Final Plan Variant

Under the Final Plan Variant, there would be 12,800 bicycle and pedestrian trips per weekday, 20 percent more trips than under the No Action Alternative (GMPA 2000). The Bikeways and Trails Master Plan would ensure that facilities were developed to accommodate the bicycle/pedestrian demand generated by this alternative.

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, there would be 15,500 bicycle and pedestrian trips per weekday, which is 45 percent more trips than the No Action Alternative (GMPA 2000). The Bikeways and Trails Master Plan

would ensure that facilities were developed to accommodate the bicycle/pedestrian demand generated by this alternative.

Sustainable Community Alternative

Under the Sustainable Community Alternative, there would be up to 18,000 bicycle and pedestrian trips per weekday, which is 68 percent more trips than the No Action Alternative (GMPA 2000). The Bikeways and Trails Master Plan would ensure that facilities were developed to accommodate the bicycle/pedestrian demand generated by this alternative.

Cultural Destination Alternative

In the case of the Cultural Destination Alternative, there would be about 18,400 bicycle and pedestrian trips per weekday, which is 72 percent more trips than the No Action Alternative (GMPA 2000). The Bikeways and Trails Master Plan would ensure that facilities were developed to accommodate the bicycle/pedestrian demand generated by this alternative.

Minimum Management Alternative

As shown in Table 44, the Minimum Management Alternative would generate approximately 11,600 daily bicycle and pedestrian trips as the primary mode of access, which is 8 percent more trips than the No Action Alternative (GMPA 2000). The increase in pedestrian and bicycle activity would generally be accommodated within the existing pedestrian and bicycle network. Because the Minimum Management Alternative would not include implementation of new programs such as the Bikeways and Trails Master Plan, improvements to the pedestrian and bicycle network would not be made, and the use of non-auto modes of travel would not be promoted.

4.5.5 TRANSIT SERVICES

In addition to the assumed changes to the roadway network within and adjacent to the Presidio, all of the alternatives assume minor modifications to Muni and GGT routes to connect to the Presidio shuttle. Muni routes that currently enter the Presidio through the Lombard gate were assumed to continue on Doyle Drive and enter the Presidio via the proposed ramps near

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Girard Road, where the buses would share a common stop with the Presidio shuttle route and GGT routes. A transit hub in the Main Post Planning District that would facilitate transfers between Muni buses and the Presidio shuttle buses is also assumed. The Main Post transit hub will be located at the foot of the Main Post planning area, within walking distance to Crissy Field and the Letterman area.

The land uses associated with the EIS alternatives would generate additional transit trips on Muni, GGT, and on the Presidio's internal shuttle based on the expected mode split for Presidio residents, employees and visitors as explained in the Travel Demand section. Table 44 summarizes the number of total transit trips per day for each alternative, while Table 50 summarizes the a.m. and p.m. peak hour transit trips by service provider by alternative based on the geographic distribution of passengers. Under all alternatives, approximately 18 percent of all trips generated by the land uses are anticipated to occur by transit. About 74 to 81 percent of the transit trips would be on Muni, 8 percent on GGT and 11 to 19 percent on the internal Presidio shuttle. Tables 4, 5 and 6 in Appendix G summarize the predicted a.m. and p.m. peak hour ridership for Muni by route and GGT.

No Action Alternative (GMPA 2000)

In 2020, the No Action Alternative (GMPA 2000) is expected to generate about 10,340 transit trips on a weekday daily basis, 997 transit trips during the a.m. peak hour, and 1,122 transit trips during the p.m. peak hour. Some of these transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle). Overall, the projected increase in transit ridership would be accommodated by the existing transit providers serving the Presidio and the internal Presidio shuttle. Planned improvements to transit service to and within the Presidio, as called for in this alternative, would also serve to accommodate the increase in transit demand. The increase in ridership on Muni lines would be distributed among the thirteen bus lines serving the Presidio and its vicinity, according to the expected geographic distribution of trips to and from the Presidio. The 82X-Presidio and Wharves Express, 43-Masonic, 29-Sunset and 28-19th Avenue are expected to carry the greatest portion (about 73 percent) of the

Muni trips (see Appendix G, Tables 4 and 5). In general, these bus lines currently have available capacity in the vicinity of the Presidio and at the maximum load point, and the maximum load points occur a substantial distance from the Presidio. Adapted GMPA EIS mitigation measures supporting increased Muni frequencies would enhance transit service to the Presidio, and would increase the capacities available on these lines.

The increase in ridership on GGT would be distributed among the 26 GGT routes that serve the Presidio, and would increase the utilization of these lines. Because most GGT buses currently operate with capacity available for additional passengers, the addition of new riders to the bus routes would not substantially affect capacity utilization. However, five GGT routes currently operate at a capacity utilization of 90 percent or greater, and substantial increases on these lines would result in a significant impact unless GGT service on these lines is increased in the future.

The No Action Alternative (GMPA 2000) would include an internal Presidio shuttle, which would accommodate the transit trips that occur within the Presidio and between Muni and GGT bus stops and internal locations. The service (routing, frequency, and vehicle size) would be structured to encourage use of the shuttle as a travel mode within the Presidio and would accommodate peak passenger demands. Mitigation calling for monitoring of transit demand and capacity, and coordination with GGT would reduce the potential impacts of this alternative on GGT.

Final Plan Alternative

The Final Plan Alternative would generate about 17,300 daily transit trips, 67 percent more trips than the No Action Alternative (GMPA 2000). Under this alternative, there would be approximately 1,432 a.m. peak hour and 2,097 p.m. peak hour transit trips in 2020. The number of a.m. and p.m. peak hour transit trips expected under the Final Plan Alternative would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 44 percent and 87 percent, respectively. As with the No Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. New mitigation, calling for increased frequency on

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Table 50: Transit Bus Peak Hour Presidio Ridership

Time Period & Service Provider	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
A.M. Peak Hour							
Muni	755	1,117	997	1,334	1,315	1,233	973
Golden Gate Transit	77	114	102	138	134	127	100
Internal Shuttle	193	242	169	183	190	289	160
Total	1,025	1,473	1,268	1,655	1,639	1,649	1,233
P.M. Peak Hour							
Muni	783	1,621	1,285	1,651	1,824	1,723	1,019
Golden Gate Transit	78	165	130	169	185	176	104
Internal Shuttle	287	269	259	277	315	456	198
Total	1,148	2,055	1,674	2,097	2,324	2,355	1,321

Source: Wilbur Smith Associates, 2001.

Note:

Total transit trips presented in this table may be greater than the number of employees, residents and visitors choosing to ride transit shown in Table 44 because some transit passengers may ride more than one transit service.

Muni lines, the planned internal shuttle, and mitigation calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

Final Plan Variant

The Final Plan Variant would generate about 13,556 daily transit trips, 31 percent more trips than the No Action Alternative (GMPA 2000). Under this alternative, there would be approximately 1,231 a.m. peak hour and 1,621 p.m. peak hour transit trips in 2020. Some of these transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle. The number of a.m. and p.m. peak hour transit trips expected under the Final Plan Variant would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 23 percent and 35 percent, respectively. As with the No

Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. New mitigation, calling for increased frequency on Muni lines, the planned internal shuttle, and mitigation calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

Resource Consolidation Alternative

The Resource Consolidation Alternative would generate about 17,062 daily transit trips, or 65 percent more trips than the No Action Alternative (GMPA 2000). Under this alternative, there would be approximately 1,603 a.m. peak hour transit trips and 2,037 p.m. peak hour transit trips in 2020. Some of these transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle. The

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number of a.m. and p.m. peak hour transit trips expected under the Resource Consolidation Alternative would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 61 percent and 70 percent, respectively. As with the No Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. The adapted GMPA EIS measure, calling for increased frequency

on Muni lines, the planned internal shuttle, and new mitigation, calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

Sustainable Community Alternative

The Sustainable Community Alternative would generate about 19,054 daily transit trips, or 84 percent more trips than the No Action Alternative (GMPA 2000). Under this alternative, there would be approximately 1,591 a.m. peak hour transit trips and 2,259 p.m. peak hour transit trips in 2020. Some of these transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle. The number of a.m. and p.m. peak hour transit trips expected under the Sustainable Community Alternative would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 60 percent and 89 percent, respectively. As with the No Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. The GMPA EIS measure calling for increased frequency on Muni lines, the planned internal shuttle, and new mitigation, calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

Cultural Destination Alternative

The Cultural Destination Alternative would generate about 19,092 daily transit trips, or 85 percent more trips than the No Action Alternative (GMPA 2000). Under this alternative, there would be approximately 1,603 a.m. peak hour transit trips and 2,293 p.m. peak hour transit trips in 2020. Some of these

transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle. The number of a.m. and p.m. peak hour transit trips expected under the Cultural Destination Alternative would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 61 percent and 92 percent, respectively. As with the No Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. The adapted GMPA EIS measure calling for increased frequency on Muni lines, the planned internal shuttle, and new mitigation, calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

Minimum Management Alternative

The Minimum Management Alternative would generate about 11,213 daily transit trips on Muni, GGT, and the Presidio's internal shuttle, approximately 8 percent more transit trips than those that would be generated under the No Action Alternative (GMPA 2000). Under this alternative there would be approximately 1,196 in the a.m. peak hour and 1,284 in the p.m. peak hour. Some of these transit trips would be made on more than one transit service (e.g., Muni, and Internal Shuttle). Table 50 and Tables 4, 5, and 6 in Appendix G reflect the ridership that would occur on GGT, Muni and the Internal Shuttle. The number of a.m. and p.m. peak hour transit trips expected under the Minimum Management Alternative would exceed the number of No Action Alternative (GMPA 2000) a.m. peak hour and p.m. peak hour transit trips by 20 percent and 7 percent, respectively. As with the No Action Alternative (GMPA 2000), capacity on the Muni system should be adequate to serve the increased ridership, but the GGT routes are already operating near capacity. The GMPA EIS measure calling for increased frequency on Muni lines, the planned internal shuttle, and new mitigation measures calling for monitoring of GGT routes and coordination with GGT would reduce the effects of this alternative on transit service.

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4.5.6 CONSTRUCTION TRAFFIC

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), approximately 1.12 million square feet (sf) would be demolished, and 170,000 sf would be newly constructed. Construction activities at the Presidio would include reconstruction of existing roadways, buildings, structural improvements and other seismic work, utility upgrades, and other infrastructure enhancements. For construction of new structures, the following phases would generally be included: demolition, excavation, installation of foundations, building structure, finishes, and landscaping. Construction vehicles would include trucks hauling construction debris and delivering construction materials and supplies, as well as construction worker vehicles. The volume of construction vehicles accessing the Presidio would vary, depending on the specific construction activity and the schedules of the various building elements of each of the alternatives. For individual projects, the duration of demolition and construction would be relatively short term.

Construction vehicles would generally access the Presidio via Lombard Street (through the Lombard gate), the Golden Gate Bridge Toll Plaza, Doyle Drive/Richardson Avenue, and Doyle Drive (via the proposed access at Girard Road). Construction traffic leaving the Presidio would generally use Lombard Street, the Golden Gate Bridge Toll Plaza, and Doyle Drive via the Marina Boulevard gate. Due to city traffic restrictions, construction traffic would not travel on Marina Boulevard. After completion of the Doyle Drive project, construction vehicles (depending on their origins and destinations) would be able to access the Presidio via the future Girard Road interchange.

Construction-related traffic could create some conflicts with local and regional traffic, especially from the larger construction vehicles. However, because construction vehicle trips traveling to and from the Presidio would be dispersed through the Bay Area, the vehicle trips on other regional roadways would not be substantial and would generally fall within the normal fluctuations of traffic. A comprehensive Construction Traffic Management Plan would be developed to provide specific routes and other measures to minimize potential traffic impacts.

Final Plan Alternative

The Final Plan Alternative would result in 1.07 million sf of demolition and 710,000 sf of new construction. The construction activities anticipated under this alternative would be similar to those described under the No Action Alternative (GMPA 2000), although there would be more construction traffic, due to the increase in demolition and construction activities. Trucks would be expected to use the same access points and routes as described above. A comprehensive Construction Traffic Management Plan would ensure that construction traffic impacts were minimized.

Final Plan Variant

The Final Plan Variant would result in 1.25 million sf of demolition and no new construction. Construction-related traffic would be limited to activities related to renovation and demolition. The frequency of such trips would be minor compared to trips associated with grading and construction, all of which would likely require hauling large amounts of material to the Presidio.

Resource Consolidation Alternative

The Resource Consolidation Alternative would result in 1.91 million sf of demolition and 1.25 million sf of new construction. The construction activities anticipated under this alternative would be similar to those described under the No Action Alternative (GMPA 2000), although there would be more construction traffic, due to the increase in demolition and construction activities. Trucks would be expected to use the same access points and routes as described above. A comprehensive Construction Traffic Management Plan would ensure that construction traffic impacts were minimized.

Sustainable Community Alternative

The Sustainable Community Alternative would result in 890,000 sf of demolition and 620,000 sf of new construction. The construction activities anticipated under this alternative would be similar to those described under the No Action Alternative (GMPA 2000), although there would be somewhat more construction traffic, due to the increase in construction activities. Under the Sustainable Community Alternative there would be less demolition

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activity than the No Action Alternative (GMPA 2000). Trucks would be expected to use the same access points and routes as described above. A comprehensive Construction Traffic Management Plan would ensure that construction traffic impacts were minimized.

Cultural Destination Alternative

The Cultural Destination Alternative would result in 1.37 million sf of demolition and 1.37 million sf of new construction. The construction activities anticipated under this alternative would be similar to those described under the No Action Alternative (GMPA 2000), although there would be more construction traffic, due to the increase in demolition and construction activities. Trucks would be expected to use the same access points and routes as described above. A comprehensive Construction Traffic Management Plan would ensure that construction traffic impacts were minimized.

Minimum Management Alternative

There would be no new or additional demolition or new construction under this alternative, so construction-related traffic would be limited to activities related to renovation. The frequency of such trips would be minor compared to trips associated with grading, demolition, and construction, all of which would likely require hauling large amounts of material to and from the Presidio.

MITIGATION MEASURES

Mitigation Adapted from the GMPA EIS

Roadway Network

Some of the improvements recommended in the GMPA EIS were assumed as part of the baseline conditions in this analysis such as the realignment of Halleck Street to intersect with Lincoln Boulevard and Anza Street, and configuration of a one-way couplet at the 14th Avenue and 15th Avenue gates. In addition to these improvements, the following mitigation measures identified in the GMPA EIS, if adopted, would generally improve the operating conditions at the intersections to acceptable levels of service. Table

48 indicates which intersections require mitigation by alternative. It should be noted that mitigation measures TR-4 and TR-12 were identified and included in the Letterman Complex EIS.

TR-1 *Presidio Avenue/Pacific Avenue Intersection.* When needed (i.e., prior to the level of service deteriorating to LOS E or F), install a traffic signal. Signalization of the intersection of Presidio Avenue/Pacific Street, when required to provide acceptable LOS, as recommended in the GMPA EIS would adequately mitigate the impacts of any alternative, and no additional mitigation measures would be necessary. No additional turning lanes would be needed to mitigate the operation of the intersection to an acceptable LOS. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-2 *Arguello Boulevard/Jackson Street Intersection.* Signalize the intersection prior to the level of service deteriorating to LOS E or F to improve LOS operation during the p.m. peak hour. Signalization of the intersection of Arguello Boulevard/Jackson Street to provide an acceptable level of service as recommended in the GMPA EIS would adequately mitigate the impacts of any alternative, although additional turning lanes would not be necessary. No additional mitigation measures would be required. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-3 *Lincoln Boulevard/25th Avenue/El Camino del Mar Intersection.* Prior to the level of service deteriorating to LOS E or F, install a traffic signal, and remove parking on the east side of 25th Avenue just south of Lincoln Boulevard in order to add a right turn lane to the northbound approach.

The GMPA EIS recommended removing parking at the intersection in order to add a lane to both the northbound and southbound approaches on 25th Avenue and the eastbound approach on El Camino del Mar, adding an exit lane to both the east and south legs of the intersection (Lincoln Boulevard and 25th Avenue), and installing a traffic signal to improve intersection operations to an acceptable LOS condition during the p.m. peak hour.

The extent of improvements recommended in the GMPA EIS for the intersection of Lincoln Boulevard/25th Avenue would not be required to

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mitigate the effects of any of the alternatives in 2020. A traffic signal would be needed to yield an acceptable level of service during the a.m. peak hour and p.m. peak hour, but an additional lane would only be needed on the northbound approach. Removing on-street parking on the east side of 25th Avenue just south of Lincoln Boulevard in order to provide a right-turn lane in combination with the signal would adequately mitigate operation of the signal to an acceptable level of service during both the a.m. peak hour and p.m. peak hour.

The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-4 *Lombard Street/Presidio Boulevard Intersection.* When needed (i.e., prior to the level of service deteriorating to LOS E or F), signalize the intersection and widen the south leg of the intersection to add a right-turn lane to the northbound approach.

The GMPA EIS recommended signalizing the intersection, and widening all three legs of the intersection to add turn lanes to the northbound and westbound approaches and provide two exit lanes on the east and north legs of the intersection. These improvements would adequately mitigate the impacts of any alternative, and no additional mitigation measures would be necessary for either the a.m. peak hour or p.m. peak hour.

The Letterman Complex EIS recommended the re-striping of the northbound approach only, in order to provide an exclusive right-turn lane.

TR-5 *Arguello Boulevard/Moraga Avenue Intersection.* When needed (i.e., prior to the intersection level of service deteriorating to LOS E or F), signalize this intersection and provide an additional lane on the eastbound approach, as recommended in the GMPA EIS. Although these measures would improve the operation of the intersection, the resulting level of service would not be LOS D or better. Mitigation Measure TR-13 describes the additional improvements required at this intersection to provide acceptable operating conditions.

TR-6 *Lincoln Boulevard/Golden Gate Viewing Entrance Intersection.* Prior to the level of service deteriorating to LOS E or F, install stop signs on

the Lincoln Boulevard approaches, and install an eastbound left-turn lane and westbound right-turn lane. If direct Presidio access to Doyle Drive is not provided, signalization of the intersection may be necessary to mitigate the operation of the intersection to LOS D or better.

The GMPA EIS recommended installing a left-turn lane on the southbound approach from the Golden Gate Viewing area as an interim improvement. The final recommendation was to signalize the intersection. These improvements would adequately mitigate the impacts of any alternative, and no additional mitigation measures would be necessary.

This intersection is located at the boundary between Area A and Area B. Therefore, the Trust would coordinate with the NPS and the Golden Gate Bridge Highway and Transportation District to determine the contribution of each party to the cost of the improvements.

TR-7 *Lincoln Boulevard/Merchant Road Intersection.* Prior to the intersection operation deteriorating to LOS E or F, realign the intersections of Lincoln Boulevard/Merchant Road and Lincoln Boulevard/Storey Avenue to create a single signalized intersection and widen Lincoln Boulevard to add a northbound left-turn pocket. If direct Presidio access to Doyle Drive is not provided, an exclusive right-turn lane may also be needed to mitigate the operation of the intersection to LOS D or better.

The GMPA EIS recommended realigning the intersections of Lincoln Boulevard/Merchant Road and Lincoln Boulevard/Storey Avenue to create a single signalized intersection with added left-turn lanes on both the eastbound and westbound approaches. These improvements would adequately mitigate the impacts of any alternative, and no additional mitigation measures would be necessary.

This intersection is located at the boundary between Area A and Area B. Therefore, the Trust would coordinate with the NPS to determine the contribution of each party to the cost of the improvements.

This mitigation measure may not be warranted for several years. The Trust plans to implement interim changes to improve the safety of this intersection.

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TR-8 *Lincoln Boulevard/Kobbe Avenue Intersection.* Prior to the intersection operation deteriorating to LOS E or F, realign Washington Boulevard to form a perpendicular intersection with Lincoln Boulevard, signalize the intersection and convert Kobbe Avenue to a one-way eastbound street. If direct Presidio access to Doyle Drive is not provided, a southbound left-turn pocket may also be needed to mitigate the effects of PTMP alternatives.

The GMPA EIS recommended realigning Washington Boulevard to form a perpendicular intersection with Lincoln Boulevard, adding left-turn lanes and signalizing the intersection. In coordination with this recommendation, the GMPA EIS recommended converting Kobbe Avenue to a one-way eastbound street. The improvements recommended in the GMPA EIS for the intersection of Lincoln Boulevard/Kobbe Avenue/Washington Boulevard would adequately mitigate the impacts of any alternative, although left-turn lanes would not be necessary for the intersection to operate at LOS D or better with PTMP alternatives.

Parking

The GMPA included a reduction in the total number of parking spaces that would be provided within the Presidio in order to encourage transit use and non-auto modes of travel. Monitoring of the long-term and short-term parking demand and implementation of TDM measures were required prior to removing major parking areas. For newly proposed mitigation see below.

Bicycle and Pedestrian Circulation

The following measure would apply to all alternatives, except Minimum Management.

TR-9 *Bicycle and Pedestrian Amenities.* Provide bicycle and pedestrian amenities such as shelters, benches, water fountains, secure bicycle racks, route lighting, and other facilities throughout the Presidio to encourage travel by foot and bicycle. This mitigation measure combined with the PTMP Planning Principles would provide a pedestrian and bicycle network that would adequately accommodate pedestrians and bicycles without creating hazards, barriers or access restrictions for pedestrians and bicyclists. No additional mitigation measures would be required.

Transit

TR-10 *Support Increased Muni Frequencies.* Increase frequency of service on existing Muni lines as warranted.

Increased frequency on existing Muni lines with or without any extensions of these lines would increase the transit peak hour capacity, and consequently reduce passenger load factors on these lines.

New Mitigation

Roadway Network

The mitigation measures discussed above do not address all of the intersections that would be affected by implementation of the PTMP. Although the PTMP Planning Principles would reduce the effects of automobile traffic on the study intersections, additional improvements would still be required to mitigate impacts at some of the study intersections.

TR-11 *14th Avenue/Lake Street Intersection Improvements.* When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), designate the 15th Avenue gate for outbound traffic, and open the 14th Avenue gate for inbound traffic. Install a traffic signal at the intersection of 14th Avenue/Lake Street, and restripe the westbound approach to provide a left-turn lane.

The GMPA EIS recommended designating the 15th Avenue gate for outbound traffic, and opening the 14th Avenue gate for inbound traffic, without any change to two-way traffic patterns on the City portions of the streets. However, the intersection of 14th Avenue/Lake Street currently operates with two-way STOP-control, and the additional traffic volumes through this intersection that would result from the opening of the gate would cause the average delay and worst approach level of service at the intersection to reach unacceptable levels. The close proximity of this intersection to the signalized intersection of Park Presidio Boulevard/Lake Street would require a signal at the intersection of 14th Avenue/Lake Street. All-way STOP-control at this location would not result in an acceptable level of service, and could potentially result in queues on the westbound approach that could extend into

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the intersection of Park Presidio Boulevard/Lake Street, requiring installation of a traffic signal.

The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-12 Lyon Street/Lombard Street Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), signalize the intersection and restripe the eastbound approach to provide an exclusive left-turn lane and a shared right-through lane. Without direct Presidio access to Doyle Drive, a southbound right-turn lane may also be needed at this intersection to mitigate the intersection operation to LOS D or better.

The same mitigation measure was identified and adopted in the Presidio Letterman Complex EIS.

It should be noted that there is an estimated width of 30 feet between the historic columns of the Lombard Street gate. While it would be possible to achieve three 11-foot wide lanes between the columns, large trucks may not be able to negotiate left or right turns at the gate without encroaching into the adjacent lane. Turn prohibitions for large vehicles could be implemented if necessary.

The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-13 Arguello Boulevard/Moraga Avenue Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), signalize and restripe the intersection to provide right-turn lanes on the northbound and eastbound approaches, and provide a left-turn lane on the westbound approach. Signalization and the provision of an additional through lane on the eastbound approach were identified in the GMPA EIS, and are described in Mitigation Measure TR-5.

TR-14 Letterman Drive/Presidio Boulevard/Lincoln Boulevard Intersection Improvements. When needed (i.e., prior to the intersection operations

deteriorating to LOS E or F), install a signal, widen Presidio Boulevard and restripe the northbound left-turn lane to a shared left-through lane. An additional northbound lane would be needed on Lincoln Boulevard north of Presidio Boulevard to accommodate this improvement.

TR-15 14th Avenue/California Street Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), install STOP signs on the California Street approaches to this intersection and restripe to add a right-turn lane to the northbound approach. This improvement could require removal of some on-street parking spaces. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements. Although installing STOP signs on California Street would improve the operation of this intersection to an acceptable level of service, queues on the westbound approach could potentially extend into the intersection of Park Presidio Boulevard/California Street. Therefore, if queues on the westbound approach to this intersection are determined to affect the operation of Park Presidio Boulevard/California Street, a traffic signal may be warranted at the intersection of 14th Avenue/California Street. A traffic signal at this location would adequately mitigate the operation of the intersection to an acceptable level of service.

TR-16 25th Avenue/California Street Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), restripe to add a left-turn lane to both the eastbound and westbound approaches of the intersection. This improvement may require removal of some on-street parking spaces. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-17 Presidio Avenue/Jackson Street Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), signalize the intersection. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-18 Presidio Avenue/Washington Street Intersection Improvements. When needed (i.e., prior to the intersection operations deteriorating to LOS E

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or F), signalize the intersection. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-19 *Arguello Boulevard/Washington Street Intersection Improvements.* When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), signalize the intersection. The Trust would coordinate with City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

TR-20 *Lincoln Boulevard/Girard Road Intersection Improvements.* When needed (i.e., prior to the intersection operations deteriorating to LOS E or F), signalize the intersection.

Parking

TR-21 *Presidio-Wide Parking Management.* In order to reduce impacts of fee parking in Area B on parts of the Presidio outside the Trust's jurisdiction (Area A), the NPS is encouraged to implement parking regulations, time-limits and/or parking fees in potentially affected parking areas under its administration (notably, Crissy Field). The Trust would provide assistance to the NPS to ensure coordination and consistency of parking management within both Areas A and B. Should the NPS choose not to adopt or enforce this measure, or is otherwise opposed to it, implementation of parking management control in Area B would impact parking for Crissy Field. This measure would apply to all alternatives except No Action (GMPA 2000).

TR-22 *TDM Program Monitoring.* The Trust has agreed to implement a TDM Program to reduce automobile usage by all tenants, occupants and visitors as summarized at the beginning of this section (see Appendix D of the Final Plan for a full description). The Trust would monitor implementation and effectiveness of the TDM program on an ongoing basis. If the TDM performance standards as described in the Final Plan (Appendix D) are not being reached, the Trust would implement more aggressive TDM strategies or intensify components of the existing TDM Program, such as requiring tenant participation in more TDM program elements, and more frequent and/or extensive shuttle service.

TR-23 *Reduce Parking Supply.* In order for the parking supply to meet, but not exceed, demand, the parking supply would be reduced in the future as decisions are made about future building uses and landscape treatments to between 7,810 (No Action Alternative (GMPA 2000)) and 9,790 (Sustainable Community Alternative) parking spaces. This measure would apply to all alternatives except the Minimum Management Alternative.

Special Event Parking

The following measure would apply to all alternatives.

TR-24 *Special Event Parking Management.* The TDM Program includes a comprehensive array of strategies to be implemented through Trust administration of park-sponsored activities and special event permitting processes including coordination with the NPS. These TDM measures are recommended to discourage single-occupant automobile usage, encourage alternative modes of travel, and maximize use of available parking resources. Special events that could result in overflow parking would be coordinated to ensure that parking supply is not exceeded. Special events would be scheduled based on parking availability, would be regulated to ensure that supply meets expected demand including demand from Area A of the Presidio. Events requiring large amounts of parking would not be scheduled concurrently with other events or Presidio peak parking demand periods if combined parking demand would exceed the available supply within Area B of the Presidio. Sponsors may be required to provide special transit and bicycle services during their events to reduce expected parking demand and promote use of public transit, biking, walking, and remote parking lots.

Transit

The following measure would apply to all alternatives.

TR-25 *Transit Service Monitoring Program.* The Trust currently monitors Muni operations and passenger loads within the Presidio. Continued monitoring of Muni service in the Presidio, and similar monitoring of GGT service at the Presidio would indicate any capacity problems, particularly on northbound GGT bus service during the p.m. peak hour. If the monitoring were to reveal insufficient capacity for northbound Presidio-generated

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passengers during the p.m. peak hour, coordinate potential improvements with the Golden Gate Bridge Highway and Transportation District.

Construction Traffic

TR-26 *Construction Traffic Management Plan*. During pre-construction activities, the contractor(s) of individual projects would work with the Trust

to develop a Construction Traffic Management Plan. The plan would include information on construction phases and duration, scheduling, proposed haul routes, permit parking, staging area management, visitor safety, detour routes, and pedestrian movements on adjacent routes.

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4.6 UTILITIES

This section evaluates potential impacts on utilities, including water supply and distribution, wastewater treatment and disposal, storm drainage, solid waste and energy consumption and distribution. The evaluation methodology, impacts for each alternative, and mitigation measures to address potential impacts are discussed under each topic area.

4.6.1 WATER SUPPLY AND DEMAND

METHODOLOGY

For each of the PTMP alternatives, future (2020) water demand is projected using the Presidio Water Balance (PWB) - an interactive computer-based model that estimates water demand and resulting production of wastewater at the Presidio. The PWB and demand factors developed as part of the Revised *PTIP Water Projections Technical Memorandum* (March 2002) were used to predict future domestic and irrigation water demand. Because irrigation demand fluctuates seasonally, off-season, peak and average monthly estimates are presented. Total projected water demand is evaluated with in the context of supplies to demonstrate the impact of each alternative on water consumption at the park. Mitigation measures which include demand and supply-side management actions are presented at the end of this section.

POTENTIAL IMPACTS

Table 51 presents a summary of projected domestic and irrigation water demands; refer to Appendix H for additional information concerning projections. At full occupancy, the domestic water demands, which do not fluctuate seasonally, range from 0.56 million gallons a day (mgd) to 0.81 mgd depending on the alternative. For the No Action Alternative (GMPA 2000), the projected domestic water demand is 0.57 mgd. Domestic demands were estimated assuming that residential units had been retrofitted with low-flow fixtures. The Trust has already renovated a majority of the residential units on the Presidio using low-flow fixtures and will continue this practice. Projections for non-residential building do not take into account conservation measures.

Irrigations demands vary greatly from season to season as well as from year to year, depending on precipitation. Projected irrigation demands range from an off-season low of 0.03 mgd to peak month demand of 1.35 mgd. Irrigation demands were estimated based on evapotranspiration rates for the area and do not take into account conservation measures such as the planned use of recycled water. For the No Action Alternative (GMPA 2000), the average demand is 0.5 mgd with an off-season and peak month demand of 0.03 mgd and 1.22 mgd, respectively. Combining the domestic and irrigation demands for the No Action Alternative (GMPA 2000) yields a total demand range of 0.60 mgd to 1.79 mgd.

The projected water demands presented in Table 51 could be reduced through the implementation of water conservation practices. Estimates indicate that the domestic water projections could be reduced by as much as 25% by retrofitting non-residential buildings with low-flow fixtures similar to residential buildings. Irrigation demands can be reduced by implementing of various BMPs (see Mitigation Measures section) as well as irrigation guidelines to improve water use efficiency. The demand and use of potable water for irrigation would also be reduced through implementation of the proposed Presidio Water Recycling Project (see Section 2.2 "Common Features" in the Alternatives Chapter).

INCREASED DEMAND FOR DOMESTIC WATER

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), daily domestic water demand is estimated at 0.57 mgd. As shown in Table 51, irrigation demands fluctuate greatly throughout the year with a projected peak demand of up to 1.21 mgd during the month of July and off-season low demand of 0.03 mgd. The projected average daily irrigation demand is 0.50 mgd. Total water demand (domestic and irrigation) would range from 0.60 mgd to 1.78 mgd throughout the year. The projected total water consumed on an annual basis would be approximately 391 million gallons.

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Table 51: Summary of Estimated Water Demands at 2020

Alternative	Domestic Demand		Irrigation Demand			Projected Annual Consumption (million gallons)
	Average Daily (mgd)	Average Daily (mgd)	Off Season Nov-April (mgd)	Peak Month (mgd)	Total Demand Range (mgd)	
No Action (GMPA 2000)	0.57	0.50	0.03	1.21	0.60 - 1.78	391
Final Plan	0.72	0.50	0.03	1.21	0.75 - 1.93	445
Final Plan Variant	0.58	0.53	0.03	1.28	0.61 - 1.86	403
Resource Consolidation	0.63	0.57	0.03	1.35	0.66 - 1.98	432
Sustainable Community	0.71	0.47	0.03	1.14	0.74 - 1.85	443
Cultural Destination	0.81	0.52	0.03	1.27	0.84 - 2.08	487
Minimum Management	0.56	0.47	0.03	1.13	0.59 - 1.69	376

On-site (Lobos Creek) water supply ranges from approximately 1.2 to 2.1 mgd. A minimum flow of 500,000 gallons per day (0.78 cfs) must pass the Lobos Creek water extraction point for support of downstream riparian habitat (see Figure 33 in Affected Environment). The Presidio therefore has a reliable, on-site water supply of between 0.7 and 1.6 mgd. As discussed in the Affected Environment Chapter (Section 3.6.1), the Army, National Park Service and Trust have purchased water from the City and County of San Francisco on an as-needed basis. Purchases range depending on the type of water year. Currently the Trust purchases approximately 15% of the annual water demand from the City. The Presidio is considered a "retail" water customer by the City and as such is subject to all mandatory water rationing programs and rate structures adopted during drought conditions

As described in the Affected Environment Chapter, the Presidio has implemented a variety of water conservation measures. In order to further conservation efforts and reduce the amount of water needed from off-site sources, the Trust has identified mitigation measures which include demand and supply measures (see UT-1 through UT-3). Implementation of the conservation and other best management practices are anticipated to reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply to meet or offset irrigation demands. Even with these actions, the on-site resources (Lobos Creek and recycled water) may not be

sufficient to meet peak demands during summer months when Lobos Creek flows are at their lowest. Therefore, supplemental water purchases from the City will continue to be pursued on as-needed basis.

Final Plan Alternative

As shown in Table 51, daily domestic water demand under the Final Plan Alternative is estimated at 0.72 mgd. Similar to the No Action Alternative (GMPA 2000), irrigation demands fluctuate greatly throughout the year. The projected peak month and off season low demands are 1.21 and 0.03 mgd, respectively. The projected average irrigation demand is 0.50 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.75 to 1.93 mgd. The projected total water consumed on an annual basis under this alternative would be roughly 445 million gallons, which is approximately 14% greater than the No Action Alternative (GMPA 2000). As noted above, available potable water supplies from Lobos Creek vary by water year between approximately 0.7-1.6 mgd.

Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would

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provide up to 0.5mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands.

Final Plan Variant

As shown in Table 51, the Final Plan Variant is projected to have a daily domestic water demand of approximately 0.58 mgd. Similar to the GMPA, irrigation demands fluctuate greatly throughout the year. The projected peak month and off season low demands are 1.28 and 0.03 mgd, respectively. The projected average irrigation demand is 0.53 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.61 to 1.86 mgd. The projected total water consumed on an annual basis under this alternative would be roughly 403 million gallons, which is approximately 3% greater than the No Action Alternative (GMPA 2000).

Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands.

Resource Consolidation Alternative

As shown in Table 51, daily domestic demand for water under the Resource Consolidation Alternative is estimated at 0.63 mgd. Similar to the No Action Alternative (GMPA 2000), irrigation demands fluctuate greatly throughout the year. The projected peak montb and off-season low demands are 1.35 and 0.03 mgd, respectively. The projected average irrigation demand is 0.57 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.66 to 1.98 mgd. The projected total water consumed on an annual

basis under this alternative would be roughly 432 million gallons, which is approximately 10% greater than the No Action Alternative (GMPA 2000). Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands.

Sustainable Community Alternative

As shown in Table 51a, daily domestic water demand under the Sustainable Community Alternative is estimated at 0.71 mgd.. Similar to the GMPA, irrigation demands fluctuate greatly throughout the year. The projected peak month and off-season low demands are 1.14 and 0.03 mgd, respectively. The projected average irrigation demand is 0.47 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.74 to 1.85 mgd. The projected total water consumed on an annual basis under this alternative would be roughly 443 million gallons, which is approximately 13% greater than the No Action Alternative (GMPA 2000).

Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands. .

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Cultural Destination Alternative

As shown in Table 51 daily demand for domestic water under the Cultural Destination Alternative is estimated at 0.81 mgd. Similar to the GMPA, irrigation demands fluctuate greatly throughout the year. The projected peak month and off-season low demands are 1.27 and 0.03 mgd, respectively. The projected average irrigation demand is 0.52 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.84 to 2.08 mgd. The projected total water consumed on an annual basis under this alternative would be 487 million gallons, which is roughly 25% greater than the No Action Alternative (GMPA 2000).

Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands.

Minimum Management Alternative

As shown in Table 51, the daily demand for domestic water would under the Minimum Management Alternative is estimated at 0.56 mgd. Similar to the GMPA, irrigation demands fluctuate greatly throughout the year. The projected peak month and off-season low demands are 1.13 and 0.03 mgd, respectively. The projected average irrigation demand is 0.47 mgd. Combining the domestic and irrigation demands yields a total water demand range of 0.59 to 1.69 mgd. The projected total water consumed on an annual basis under this alternative would be roughly 376 million gallons, which is approximately 4% less than the No Action Alternative (GMPA 2000).

Similar to the No Action Alternative (GMPA 2000), mitigation measures UT-1 through UT-3 would be implemented to reduce demands and develop additional supplies. Implementation of conservation and other best

management practices could reduce demands (domestic and irrigation) by as much as 25% on an annual basis. The proposed water recycling project would provide up to 0.5 mgd of additional water supply which could be used to meet or offset irrigation demand. However, supplemental water would continue to be purchased from the City on an as needed basis during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands

MITIGATION MEASURES

Measures adapted from the GMPA EIS

The GMPA EIS did not include mitigation for water supply and demand.

New Mitigation

Water Supply and Demand

The following measures would apply to all alternatives.

UT-1 Demand Management Best Management Practices. The Trust, in cooperation with all its tenants and residents, would continue to implement Best Management Practices that encourage water conservation. Given the evolutionary nature of water conservation measures, the Trust would make provisions for the removal or addition of BMPs as the technical and economic reasonableness of measures are determined. Current BMPs are:

- Continue to identify and repair leaks to reduce distribution system losses;
- Install water meters and develop a consumption-based billing system to discourage inefficient use of water;
- Conduct water audits and monitor tenants' meters, water heaters, and plumbing fixtures;
- Install water-conserving devices as part of all building rehabilitation projects. Retrofit requirements include installation of low-flow toilet and shower fixtures and faucet aerators, and recycled water irrigation systems (in areas where recycled water is or will be available);
- Implement park-wide Irrigation Guidelines which include specific requirements for efficient and effective water application (i.e., non-

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- daylight hour application, use of highly-efficient irrigation systems, use of meteorological data in irrigation scheduling, etc.), and use of recycled water for irrigation wherever available;
- Prohibit use of additional water for new landscaping or expansion of existing facilities unless low water use landscaping designs and plant materials are consistent with the recommendations of the adopted Presidio Vegetation Management Plan (which requires the use of drought tolerant plant species) and water efficient irrigation systems;
- Hire or designate an in-house Water Conservation Coordinator;
- Provide comprehensive water conservation outreach efforts to tenants and residents, including brochures, newsletter announcements, posters, direct mailings, and other “attention getters;” and
- Participate in efforts being made by other water management agencies to identify additional conservation programs.
- Install Pressure Regulating Valves (PRV) at specific buildings where water pressure warrants such action.

UT-2 *Water Shortage Emergency Response.* The Trust would prepare a water shortage contingency analysis that includes the following elements:

- Stages of action to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage;
- An estimate of the minimum water supply available based on the driest three-year historic sequence for water supply;
- Actions to be undertaken to prepare for, and implemented during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster;
- Additional, mandatory prohibitions against specific water-use practices during water shortages;
- Appropriate consumption reduction methods in the most restrictive stages that have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply;
- Penalties or charges for excessive use, if feasible; and
- A mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.

In addition, the Trust would also be subject to the City and County of San Francisco’s (CCSF) water contingency plan and drought restrictions for all City-purchased water. During times of drought or low runoff, when the CCSF water system may be vulnerable in its ability to provide a safe reliable source of water, the Trust may be allocated a drought allotment based on an examination of domestic water usage, irrigation water usage, and water produced from the Lobos Creek Water Treatment Plant. Under CCSF emergency conditions, the Trust would consider supplying water to the CCSF for the purpose of augmenting its total water supply if Trust water is available beyond the amounts necessary to meet Presidio service needs (based on a rationed domestic use and restricted irrigation schedule), and ensure resource protection objectives and minimum stream flows within Lobos Creek are met.

UT-3 *Recycled Water Use.* The Trust is proceeding with an evaluation and environmental review of an onsite phased water reclamation system (see UT-6) for use as a non-potable water source. The system would use recycled water in the Presidio to reduce consumption of potable water for non-potable uses (i.e., irrigation), and also to lower the volume of wastewater discharged to the City’s combined sewer system.

4.6.2 WASTEWATER TREATMENT AND DISPOSAL

METHODOLOGY

Wastewater generation under the various EIS alternatives is projected by applying a 90 percent factor to the domestic water use estimates, which are discussed above. In response to public comments on the Draft EIS, the factor was increased to 0.90 from 0.80 to be consistent with the City’s practice. This methodology assumes that approximately 90 percent of all water used (excluding water used for irrigation purposes) enters the wastewater treatment and disposal system. Projected wastewater generation is compared to current levels to determine whether there would be an adverse effect on the City’s sanitary sewer system, which treats wastewater from the Presidio.

Each alternative is also compared to the No Action Alternative (GMPA 2000) to determine the project impact in terms of wastewater generation. This process is contained in Table 52. The water inputs are shown in Table 51.

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As shown in Table 52, the projected wastewater generated from all of the alternatives ranges from a low of 0.50 mgd to a high of 0.73 mgd. All of the alternatives would produce wastewater flows greater than current flow of approximately 0.4 mgd. However, as discussed in the Affected Environment Chapter, historic flows entering the CCSF system have been much higher. In 1990, as the Army was leaving the Presidio, approximately 475 million gallons of wastewater was discharged to the CCSF system, which equates to a flow of 1.29 mgd. Even at full occupancy, all of the alternative would generate far less wastewater than the 1990 levels.

Before leaving the Presidio, the Army implemented a large-scale infrastructure repair program, which included slip-lining existing pipe lines to minimize infiltration of stormwater. This program as well as infrastructure repairs made by the National Park Service and the Trust (i.e. repairing cracked sections of pipe and separating cross connections between the stormwater and sanitary systems) have resulted in a substantial reduction in Presidio flows entering the CCSF combined sewer system. Although it is difficult to make a direct comparison between annual flow data from before and after these various improvements were made (as occupancy rates have also varied), there is clearly a noticeable reduction. In 2000 total annual flows were approximately 120 million gallons – or roughly one-quarter of the 1990 flows.

Under each of the alternative, activities to rehabilitate the sewer infrastructure would continue to further reduce infiltration. Additionally, the proposed recycled water project, which would recycle up to 500,000 gpd of wastewater, would further reduce flows to the CCSF system.

INCREASED WASTEWATER GENERATION

No Action Alternative (GMPA 2000)

The No Action Alternative (GMPA 2000) is projected to generate approximately 0.51 million gallons of wastewater per day (Table 52). This amount represents approximately 0.11 mgd more than the current Presidio wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Additionally, as discussed in the Affected

Environment Chapter, approximately 85% of the wastewater generated on the Presidio is discharged through the three east-side discharges to the CCSF system and routed to the SEWPCP. Under this alternative, approximately 0.48 mgd would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would further reduce wastewater generation, and would minimize flows to the City of San Francisco's sanitary sewer.

Table 52: Projected Wastewater Generation (mgd)

Alternative	Projected Water Use ^a	Wastewater Generation ^b	Change from Current Flows ^c
No Action (GMPA 2000)	0.57	0.51	0.11
Final Plan	0.72	0.65	0.25
Final Plan Variant	0.58	0.52	0.12
Resource Consolidation	0.63	0.57	0.17
Sustainable Community	0.71	0.64	0.24
Cultural Destination	0.81	0.73	0.33
Minimum Management	0.56	0.50	0.10

Sources: EIP Associates; The Presidio Trust; Bay Area Economics, 2001; URS 2001 & 2002.

Notes:

a Water use projections, less irrigation.

b Wastewater generation is assumed to be 90 percent of domestic water consumption (i.e., excludes irrigation uses).

c Current flows are 400,000 gallons per day; 1990 flows were approximately 1.3 million gallons per day

mgd = million gallons per day

Final Plan Alternative

The Final Plan Alternative is projected to generate approximately 0.65 million gallons of wastewater per day (Table 52). This amount represents approximately 0.25 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.55 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's capacity. The proposed mitigation

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measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

Final Plan Variant

The Final Plan Variant is projected to generate approximately 0.52 million gallons of wastewater per day (Table 52). This amount represents approximately 0.12 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.44 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

Resource Consolidation Alternative

The Resource Consolidation Alternative is projected to generate approximately 0.57 million gallons of wastewater per day (Table 52). This amount represents approximately 0.17 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.48 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

Sustainable Community Alternative

The Sustainable Community Alternative is projected to generate approximately 0.64 million gallons of wastewater per day (Table 52). This amount represents approximately 0.24 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.54 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet

weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

Cultural Destination Alternative

The Cultural Destination Alternative is projected to generate approximately 0.73 million gallons of wastewater per day (Table 52). This amount represents approximately 0.33 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.62 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

Minimum Management Alternative

The Minimum Management Alternative is projected to generate approximately 0.52 million gallons of wastewater per day (Table 52). This amount represents approximately 0.10 million gallons a day more than the current wastewater flow to the City of San Francisco's sanitary sewer system but substantially less than 1990 flows. Similar to the No Action Alternative (GMPA 2000), approximately 85% (or 0.43 mgd) would be routed to the SEWPCP, which is less than one-half percent of the plant's dry and wet weather capacity. The proposed mitigation measures, which include construction of a recycled water treatment plant and conservation measures, would minimize discharges to the City's system.

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS did not include mitigation for wastewater treatment.

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New Mitigation

The following measures would apply to all alternatives.

UT-4 Reduction of Onsite Wastewater Generation. The Trust would implement water conservation best management practices described in Measure UT-1 in the Water Supply and Demand section, to limit water usage at the Presidio, which would reduce wastewater generation as well. These practices would include repairing leaks, installing water meters, conducting water audits, retrofitting with water-conserving devices, designating an in-house Water Conservation Coordinator, providing information to tenants and residents, and participating in the efforts of other water management agencies. Additionally the Trust would continue to rehabilitate the sewer infrastructure (slip-lining and replacing broken or cracked sections of pipe) to reduce stormwater infiltration into the wastewater system.

UT-5 Limits on Offsite Wastewater Flows. The Trust would continue the development of the reclaimed water system and treatment plant (see also UT-3). As stated in the Affected Environment, the plant would have a minimum treatment capacity of 200,000 gpd and be expandable up to 500,000 gpd and would reduce wastewater flows to the City of San Francisco combined system.

At times of year when recycled water is not needed for irrigation, the Trust would consider using the reclaimed water system to treat wastewater from the eastern side of the Presidio and discharge it on the western side of the park to the City's Oceanside Water Pollution Control Plant (OWPCP). The sanitary sewer system serving the OWPCP has a greater capacity to absorb wet weather flows. Therefore, redirecting Presidio flows to the west side would help limit CSOs from the City's combined sewage system.

4.6.3 STORM DRAINAGE

METHODOLOGY

A general assessment of potential changes in stormwater runoff was conducted for each of the alternatives evaluated in this EIS. The purpose of the assessment is to provide a comparison among the alternatives, and identify

general increases and decreases in the volume of stormwater runoff that may occur. In order to provide a gross assessment of potential changes in stormwater flows, the amount of net new construction (i.e. new construction less demolition) in each planning district is used to estimate possible changes in permeable surfaces and thus stormwater runoff. Note that this is a conservative methodology, as it assumes that all additional construction would only have one story and that new construction would directly result in new impervious surfaces. In all likelihood, new construction would include building additions and/or would be constructed in areas that are already covered with impervious surfaces and thus would not increase the rate or volume of existing stormwater runoff. In addition, the square footage of new construction identified under each alternative does not directly equate to new impervious surfaces as new structures could have, for example, two stories and thus cover half the space that would otherwise be inferred from directly using total new square feet. This assessment also does not account for reduction in previous surfaces associated with cultural landscape restoration (i.e., conversion of the Main Post parade ground from concrete to pervious surfaces) that would occur under the various alternatives.

The primary source of available information related to Presidio storm hydrology and system capacity is the 1994 Presidio Stormwater Management Plan (Stormwater Plan) and corresponding model. Information from the Stormwater Plan related to the 30 minute and 60 minute storm events were evaluated in the preparation of this analysis. These events were used because, according to the Stormwater Plan, they "...correspond to the time of concentration of the individual subbasins as well as the cumulative time of concentration for the watershed basin" (Section 5.1, Stormwater Management Plan). Based on this data, and assuming a 10-year storm event of one hour, the assumed rainfall intensity of 0.85 inches an hour was used for the purposes of this analysis. A distinct runoff coefficient is used for each planning district to reflect the varying surfaces across the Presidio. Coefficients were derived based on professional judgment of Trust staff and information provided in the Stormwater Plan.

The following presents a generalized assessment of the storm drainage system's ability to accommodate projected increase in flow based on the professional judgment of Trust utilities staff. In general, the projected

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increase in flow under all of the alternatives is considered minor and does not pose a significant capacity issue for the existing storm drainage system. Because this analysis relies on a generalized methodology, additional site-specific infrastructure planning would occur following completion of the PTMP planning and environmental review processes and approval of a particular alternative.

In addition to the discussion of changes in runoff volume, a general description of the water quality monitoring and Best Management Practices (BMPs) to improve quality and reduce runoff is provided for each alternative. These actions are collectively being addressed in the interim Stormwater Pollution Prevention Plan (SPPP) currently under preparation. As described in Section 3.6.3 (Affected Environment), the SPPP is being developed to be consistent with the guidelines for stormwater management as established under the National Pollutant Discharge Elimination System (NPDES) and will remain in effect until the Trust obtains an NPDES permit. As such, the SPPP would be implemented under all of the EIS alternatives.

Main Post and Crissy Field

These Planning Districts are served by outfall pipes D through L. System D has a 72-inch outfall pipe with sufficient capacity to accommodate additional flows from any of the alternatives. Systems E and F are expected to accommodate any increase in stormwater flows due to the recent construction of Crissy Field outfalls. Stormwater systems G-H, and I-J-K-L are designed for the 50-year event, and can therefore accommodate the additional flows.

Letterman

The Letterman Planning District is served by outfall B-4. As stated in Section 3.6.3 (Affected Environment), outfall B-4 is a 42-inch pipeline with a capacity of 85 cfs, which is sufficient to accommodate the additional flow from the alternatives. Additionally, the discharge location for this outfall is planned to be rerouted to Crissy Marsh with use of an oil/water separator to prevent blockage due to sand accumulation. The Letterman Planning District consists of approximately 90 percent impervious area, and the existing storm drain system is adequate to accommodate all flows from the 10-year event. Even if

the impervious area were increased to 100 percent impervious, the drainage system would still accommodate the 10-year event.

Fort Scott

As discussed in Section 3.6.3 (Affected Environment), the main outfall serving the Fort Scott District currently experiences flooding during intense storm events if the mouth of the outfall is not regularly maintained. This operational problem would continue under all of the alternatives. Proposals to address this problem and reduce the need for constant maintenance are currently being evaluated.

East Housing

Outfall D (72-inch pipe with 350 cfs capacity) is large enough to accommodate additional flows. The Tennessee Hollow Restoration Project (planning is currently underway) is expected to reduce the amount of impervious surface in this area, and therefore, will further limit stormwater flows.

South Hills and Public Health Service Hospital

As stated in Section 3.6.3 (Affected Environment), these planning districts do not currently experience flooding problems and the net reduction in built area proposed under all alternatives would further reduce storm flows in these areas.

POTENTIAL IMPACTS

INCREASED DEMAND FOR STORMWATER DRAINAGE

No Action Alternative (GMPA 2000)

As seen in Table 53, Fort Scott is the only planning that would experience an increase in stormwater flow under the No Action Alternative (GMPA 2000). The projected increase has the potential to exacerbate the current operation problem of the outfall. Implementation of mitigation measures proposed at

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Table 53: General Estimates for Stormwater Runoff, By Planning Area

	New Construction (sf)	Demolition (sf)	Net New Construction (sf)	Net New Construction (acres)	Q (cfs)	Change from No Action (GMPA 2000) (cfs)
No Action (GMPA 2000)						
Main Post/Crissy	100,000	270,000	-170,000	-3.9	-2.8	N/A
Letterman	0	0	0	0.0	0.0	N/A
Fort Scott	50,000	0	50,000	1.1	0.6	N/A
East Housing	0	100,000	-100,000	-2.3	-0.6	N/A
South Hills/PHSH	20,000	750,000	-730,000	-16.8	-5.0	N/A
Total					-7.8	N/A
Final Plan						
Main Post/Crissy	180,000	60,000	120,000	2.8	2.0	4.9
Letterman	160,000	30,000	130,000	3.0	2.3	2.3
Fort Scott	170,000	70,000	100,000	2.3	1.3	0.7
East Housing	70,000	100,000	-30,000	-0.7	-0.2	0.4
South Hills/PHSH	130,000	810,000	-680,000	-15.6	-4.6	0.4
Total					0.8	8.7
Final Plan Variant						
Main Post/Crissy	0	290,000	-290,000	-6.7	-4.8	-2.0
Letterman	0	40,000	-40,000	-0.9	-0.7	-0.7
Fort Scott	0	10,000	-10,000	-0.2	-0.1	-0.7
East Housing	0	100,000	-100,000	-2.3	-0.6	0.0
South Hills/PHSH	0	810,000	-810,000	-18.6	-5.5	-0.5
Total					-11.1	-3.9
Resource Consolidation						
Main Post/Crissy	480,000	320,000	160,000	3.7	2.7	5.5
Letterman	470,000	80,000	390,000	8.9	6.8	6.8
Fort Scott	150,000	80,000	70,000	1.6	0.9	0.3
East Housing	150,000	160,000	-10,000	-0.2	-0.1	0.4
South Hills/PHSH	0	1,270,000	-1,270,000	-29.1	-8.7	-3.6
Total					1.6	9.4
Sustainable Community						
Main Post/Crissy	410,000	110,000	300,000	6.9	5.1	7.8
Letterman	0	20,000	-20,000	-0.4	-0.5	-0.4
Fort Scott	0	30,000	-30,000	-0.7	-0.4	-1.0
East Housing	180,000	100,000	90,000	2.0	0.5	1.1
South Hills/PHSH	20,000	630,000	-610,000	-14.0	-4.2	0.8
Total					0.6	8.3
Cultural Destination						

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Table 53: General Estimates for Stormwater Runoff, By Planning Area

	New Construction (sf)	Demolition (sf)	Net New Construction (sf)	Net New Construction (acres)	Q (cfs)	Change from No Action (GMPA 2000) (cfs)
Main Post/Crissy	530,000	100,000	430,000	9.9	7.2	10.0
Letterman	410,000	70,000	340,000	7.8	6.0	6.0
Fort Scott	200,000	80,000	120,000	2.7	1.5	0.9
East Housing	100,000	130,000	-30,000	-0.7	-0.2	0.4
South Hills/PHSH	130,000	990,000	-860,000	-19.7	-5.8	-0.8
Total					8.7	16.5
Minimum Management						
Main Post/Crissy	0	0	0	0.0	0.0	2.8
Letterman	0	0	0	0.0	0.0	0.0
Fort Scott	0	0	0	0.0	0.0	-0.6
East Housing	0	0	0	0.0	0.0	0.6
South Hills/PHSH	0	0	0	0.0	0.0	5.0
Total					0.0	7.8

Source: EIP; Presidio Trust; Bay Area Economics, 2002.

Notes:

Assumes a 10-year storm event of 1-hour duration, rainfall of 0.85 inches an hour, and the following runoff coefficients:

Planning District	Runoff Coefficient
Main Post/Crissy	0.85
Letterman	0.90
Fort Scott	0.65
East Housing	0.30
South Hills/PHSH	0.35

Runoff coefficients derived from conversations with Trust Utility staff and the 1994 Presidio Stormwater Management Plan.

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the end of this section, would require a detailed analysis of system capacity and operation deficiencies and subsequent infrastructure improvements prior to the implementation of new construction. The Trust would also require that future site-specific planning activities incorporate design actions to minimize stormwater runoff and improve overall stormwater quality (refer to mitigation measures at the end of this section for additional detail).

In addition to these mitigation measures, the Trust will be required to obtain a National Pollution Discharge Elimination System (NPDES) phase II permit. As described in the Affected Environment Section (Section 3.6.3), the Presidio Trust is in the process of finalizing, in cooperation with the NPS, an interim Stormwater Pollution Prevention Plan (SPPP). The SPPP will identify Best Management Practices (BMPs) as well as the sampling design and protocol, threshold requirements for constituents monitored, and a reporting mechanism which will be used to monitor and ensure that the BMPs being implemented are effectively meeting stormwater quality requirements. This interim SPPP will adhere to the general guidelines for stormwater management as established under the NPDES and will remain in effect until the Trust obtains the required NPDES phase II permit. The BMPs identified in the SPPP will be consistent with the California Stormwater Best Management Practices Handbook, including the use of oil-water separators (several are already in use at Crissy Field), street sweeping, and other actions to improve stormwater quality at the park.

Final Plan Alternative

As shown in Table 53, the Final Plan Alternative is projected to increase stormwater flow in the Main Post, Crissy Field, Letterman, and Fort Scott Planning Districts and a decrease the East Housing and South Hills Planning Districts. The additional flow in the Main Post, Crissy Field, and Letterman Planning Districts would be negligible, given the large capacity of these drainage systems. As in the No Action Alternative (GMPA 2000), Fort Scott's existing drainage system requires upgrades to address existing capacity deficiencies as well as any changes in projected future flows. Overall, this alternative would generate approximately 8.7 cfs more stormwater runoff than the No Action Alternative (GMPA 2000), however,

there would be a net reduction in total parkwide stormwater runoff when compared to existing conditions (based on the overall reduction in built space at the Presidio). Similar to the No Action Alternative (GMPA 2000), the Trust would require site-specific evaluation of system capacity and infrastructure repairs prior to new construction. The Trust would also ensure that future planning incorporate actions to minimize stormwater runoff and improve water quality (i.e., use of on-site vegetation and landscaping as a filtration and retention systems, etc.). BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit would be implemented to improve stormwater quality, minimize runoff and monitor the effectiveness of these actions. Implementation of the proposed mitigation and NPDES requirements would minimize the impacts of increased flows from this alternative and improve stormwater quality.

Final Plan Variant

As shown in Table 53, the Final Plan Variant is projected to decrease stormwater flow in all planning districts when compared to the No Action Alternative (GMPA 2000). Overall, there would be approximately 3.9 cfs less stormwater runoff than the No Action Alternative (GMPA 2000). The Final Plan Variant would also result in a net reduction in stormwater flows when compared to existing conditions (based on the overall reduction in built space at the park). While this alternative decreases stormwater flow and mitigation would not be required, the Trust would implement BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit to improve stormwater quality and further reduce runoff.

Resource Consolidation Alternative

As shown in Table 53, the Resource Consolidation Alternative is projected to increase stormwater flow in the Main Post, Crissy Field, Letterman, and Fort Scott Planning Districts and an overall reduction of in the East Housing, South Hills and PSHH Planning Districts. The additional flow in the Main Post, Crissy Field, and Letterman Planning Districts would be negligible, given the large capacity of these drainage systems. As in the No Action Alternative (GMPA 2000), Fort Scott's existing drainage system requires upgrades to accommodate existing and projected flows. Overall, impacts under this alternative would generate approximately 9.4 cfs more stormwater runoff than

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the No Action Alternative (GMPA 2000), however, there would be a net reduction when compared to existing conditions (based on the overall reduction in built space at the Presidio). Similar to the No Action Alternative (GMPA 2000), the Trust would implement mitigation measures to ensure that necessary infrastructure repairs and upgrades are implemented prior to new construction, and that future planning incorporate site-specific actions to reduce stormwater runoff and improve water quality. In addition, BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit would be implemented to improve stormwater quality. Implementation of the proposed mitigation and NPDES permit requirements would minimize the impact of increased flows from this alternative and improve stormwater quality.

Sustainable Community Alternative

As shown in Table 53, the Sustainable Community Alternative is projected to increase stormwater flow in the Main Post, Crissy Field, and East Housing Planning Districts and an overall reduction in the Letterman, Fort Scott, South Hills, and PSHH Planning Districts. The additional flows in the Main Post, Crissy Field, and East Housing Planning Districts would be negligible, given the large capacity of these drainage systems. Overall, this alternative would generate approximately 8.3 cfs more stormwater runoff than the No Action Alternative (GMPA 2000) and would have a net reduction in total runoff when compared to existing conditions (based on the overall reduction in built space). The main outfall serving the Fort Scott Planning District would require improvements even with no increase in flow. Similar to the No Action Alternative (GMPA 2000), the mitigation measures presented at the end of this section would be implemented to ensure that necessary infrastructure repairs and upgrades are implemented prior to new construction and that future planning incorporate actions to minimize runoff and improve water quality. In addition, BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit would be implemented to improve stormwater quality. Implementation of the proposed mitigation and NPDES permit requirements would minimize the impacts of increased flows from this alternative, and improve overall stormwater quality.

Cultural Destination Alternative

As shown in Table 53 the Cultural Destination Alternative would increase stormwater flow in the Main Post, Crissy Field, Letterman and Fort Scott Planning Districts and would reduce flows in the East Housing, South Hills, and PSHH Planning Districts. The Letterman system could accommodate the increased flows, given the large capacity of its drainage system. As in the No Action Alternative (GMPA 2000), Fort Scott's existing drainage system requires upgrades to accommodate existing and projected flows. Overall, this alternative would generate approximately 16.5 cfs more stormwater runoff than the No Action Alternative (GMPA 2000). Similar to the No Action Alternative (GMPA 2000), the mitigation measures presented at the end of this section would be implemented to ensure that necessary infrastructure repairs and upgrades are implemented prior to new construction and that future planning incorporate actions to minimize runoff and improve water quality. In addition, BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit would be implemented to improve stormwater quality. Implementation of the proposed mitigation and NPDES permit requirements would minimize the impacts of increased flows from this alternative, and improve overall stormwater quality.

Minimum Management Alternative

As no new construction is planned under the Minimum Management Alternative, no increase in stormwater flow is projected. However, since the baseline for comparison is the No Action Alternative (GMPA 2000) which would generate a net decrease in stormwater flows, this beneficial effect would not be realized under this alternative. In comparison to the No Action Alternative (GMPA 2000), this alternative would generate approximately 7.8 cfs more stormwater flows (See Table 53). Under this alternative, the main outfall serving the Fort Scott Planning Area would require improvements to accommodate current flows. Similar to the No Action Alternative (GMPA 2000), BMPs and other provisions required as part of the interim SPPP and subsequent NPDES phase II permit would be implemented to improve stormwater quality. .

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS did not include mitigation for storm drainage.

New Mitigation

The following mitigation measures would apply to all alternatives except the Minimum Management Alternative.

UT-6 Stormwater Drainage System Upgrades. Prior to any new construction, the Trust would require that necessary infrastructure upgrades to the stormwater drainage system are performed on a site-specific basis to ensure that the adequate system capacity is provided and also to correct existing operational problems.

UT-7 Stormwater Reduction. As part of planning for future projects under the PTMP, the Trust would implement designs or measures to limit or eliminate impervious surfaces in order to reduce stormwater runoff volumes and improve water quality. The Trust would practice natural stormwater reduction by using on-site vegetation and landscaping as a filtration and retention system to the extent feasible. Grass, sand, and other porous surfaces, particularly when placed around non-porous surfaces such as asphalt, could significantly limit stormwater runoff. Projects would be reviewed to determine if stormwater flows could be limited through reduction of impervious surfaces and addition of porous surfaces. [See Section 4.3.2 (Water Resources) for additional mitigation measures related to stormwater quality.]

4.6.4 SOLID WASTE

METHODOLOGY

For each PTMP alternative, the estimated amount of solid waste that would be generated over the 20-year planning horizon is provided. Please refer to Appendix 1 for additional background including information on the regional waste stream (for the nine counties in the San Francisco Bay Area). The

estimates for solid waste generated under each alternative is compared to the waste generated under the No Action Alternative (GMPA 2000) as well as the regional waste stream

POTENTIAL IMPACTS

INCREASED SOLID WASTE GENERATION

No Action Alternative (GMPA 2000)

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the No Action Alternative (GMPA 2000) would result in the disposal of up to 113,991 tons of debris, constituting 0.08 percent annually of the regional solid waste stream over the next twenty years (see Table 54). The Trust would reduce waste through efficient resource use, recycling and reuse, and by diverting organic material from waste and purchasing products composed of recycled materials. A solid waste management program would be implemented. Recycled asphalt and concrete would be used for paving where practical. Recycling bins would be available at all activity sites, and tenants would be encouraged to set aside indoor recycling areas. Mitigation measures would help minimize the solid waste generated by construction activities under this alternative. In addition, the Presidio Salvage Program would reclaim valuable equipment, supplies and materials and divert them from the waste stream. Building materials would be saved from deconstruction and selective demolition projects. These would be reused on the Presidio, and made into new products or art. Wood from downed trees would be used for value-added purposes such as construction projects or mulch, or would be sent off site to be used as fuel.

Final Plan Alternative

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Final Plan Alternative would result in the disposal of up to 109,276 tons of debris (see Table 54). The waste would be generated primarily from the deconstruction/ demolition of the 1.1 million square feet, new construction of 710,000 square feet and rehabilitation of 4.9 million square feet of building space (see Table 54).

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Table 54: Estimated Solid Waste Impacts

	Estimated Total Debris (tons) (a)	Change from No Action (tons)	Estimated Annual Project Impact (tons) (b)	Estimated Percent of Total 1999 Tonnage (c)
No Action (GMPA 2000)	113,991	N/A	5,700	0.08
Final Plan	109,276	(4,715)	5,464	0.08
Final Plan Variant	125,962	11,971	6,298	0.09
Resource Consolidation	162,812	48,821	8,141	0.12
Sustainable Community	98,792	(15,199)	4,940	0.07
Cultural Destination	126,904	12,913	6,345	0.09
Minimum Management	50,209	(63,782)	2,510	0.04

Sources: California Integrated Waste Management Board; Bay Area Economics, 2002.

Notes:

- (a) See Solid Waste Estimates by PTMP Alternative (Table 3) in Appendix I.
- (b) Assumes a 20-year buildout.
- (c) Total 1999 Bay Area Solid Waste Tonnage: 6,851,632 (from Appendix I Table 1). This percentage is derived from the Annual Project Impact divided by the total 1999 Bay Area Solid Waste Tonnage.

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The Final Plan Alternative would generate up to 4,715 tons less waste than the No Action Alternative (GMPA 2000), and would result in an annual reduction of 9 tons of debris. Overall, this tonnage represents approximately 0.08 percent of the estimated annual regional waste stream. Mitigation for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Final Plan Variant

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Final Plan Variant would result in the disposal of up to 125,962 tons of debris. The Final Plan Variant would generate up to 11,971 tons more waste than the No Action Alternative (GMPA 2000), and would result in the disposal of an additional 527 tons of annual debris. This tonnage represents approximately 0.09 percent of the estimated annual regional waste stream (see Table 54). Mitigation for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Resource Consolidation Alternative

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Resource Consolidation Alternative would result in the disposal of up to 162,812 tons of debris – the most of any of the alternatives. The Resource Consolidation Alternative would generate up to 48,821 tons more waste than the No Action Alternative (GMPA 2000), and would result in the disposal of an additional 2,369 tons of annual debris. Overall, this tonnage represents approximately 0.12 percent of the estimated annual regional waste stream (see Table 54). Mitigation for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Sustainable Community Alternative

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Sustainable Community Alternative would result in the disposal of up to 98,792 tons of debris. The Sustainable Community Alternative would generate up to 15,199 tons less waste than the No Action Alternative (GMPA 2000), and would result in the reduction of solid waste by 832 tons annually. Overall, this tonnage represents approximately 0.07 percent of the estimated annual regional waste stream (see Table 54).

Mitigation for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Cultural Destination Alternative

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Cultural Destination Alternative would result in the disposal of up to 126,904 tons of debris. This alternative would generate up to 12,913 tons more waste than the No Action Alternative (GMPA 2000), and would result in the disposal of an additional 574 tons of annual debris. Overall, this tonnage represents approximately 0.09 percent of the estimated annual regional waste stream (see Table 54). Mitigation for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Minimum Management Alternative

Demolition, construction, and rehabilitation activities at the Presidio under build-out of the Minimum Management Alternative would include the disposal of up to 50,209 tons of debris. The Minimum Management Alternative would generate up to 63,782 tons less waste than the No Action Alternative (GMPA 2000), and would result in the reduction of solid waste by 3,261 tons annually. Overall, this tonnage represents approximately 0.04 percent of the estimated annual regional waste stream (Table 54). Mitigation for this alternative would be the same for the No Action Alternative (GMPA 2000).

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS did not include any mitigation for solid waste.

New Mitigation

The following mitigation would apply to all alternatives.

UT-8 *Waste Diversion*. To the extent possible, the Trust would implement cost-effective, environmentally protective alternatives to disposal of

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demolition debris to help meet the mandates of the State's 1989 waste diversion law (requiring cities and counties to divert 50 percent of their waste streams from landfills by the year 2000) including the following:

- Selection of contractors who understand the processes involved and are able to maximize reuse and recycling of construction and demolition materials;
- Clearing salvageable items from structures prior to demolition activities, including such items as piping, flooring, doors, windows, bathroom fixtures and kitchen fixtures, hospital equipment, heaters, and lumber;
- Removing and encapsulating contamination before demolition to minimize commingling of the wastes and to maximize reuse of the uncontaminated materials;
- Bringing down buildings piece by piece, as in hand demolition, to recover the maximum amount of reusable materials;
- Size-reducing (especially concrete) and presorting and segregating materials after demolition to increase salvage value of the recovered materials, and to decrease tipping fees for different materials in the debris;
- Recycling materials on-site to lower both hauling and disposal costs; and

Storing recovered materials within the Presidio to avoid flooding a market with too much recyclable materials at one time (which drives local prices down and reduces potential income from the sale of materials).

4.6.5 ENERGY CONSUMPTION AND DISTRIBUTION

Presidio Electrical Supply

METHODOLOGY

The proposed square footage for each land use is used to project the electrical use and demand generated under the various alternatives. Energy and demand factors are derived from Pacific Gas & Electric (PG&E) load study data and RS Means electrical demand data respectively. A coincidence factor of 25 percent and a system loss factor of 10 percent are assumed. Electrical

projections for each alternative are contained in Tables 1 through 7 in Energy Appendix J and summarized on Table 55.

The projected electrical demand under each alternative is compared to the capacity of the existing on- and off-site electrical distribution system to determine if system upgrades are necessary. On-site demand must be served by transformers at the Main Post and Greenwich substations. Total demand must not exceed the total on-site transformer capacity of 13,275 kilowatts (kW). Individual transformers must also have the capacity to meet the demand from the buildings they serve. In terms of off-site requirements, PG&E's feeders entering into the Presidio currently have approximately 2,700 kW of spare capacity.¹ The Trust reports that existing current demand is 3,876 kW. Any alternative whose electrical demand exceeds the sum of spare capacity and existing demand (i.e. 6,576 kW) would, therefore, require off-site upgrades by PG&E.

POTENTIAL IMPACTS

DEMAND FOR ELECTRICITY

No Action Alternative (GMPA 2000)

Under the No Action Alternative (GMPA 2000), up to 47.80 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 9.54 kilowatt-hours (kWh) per square foot (see Table 55). The projected maximum demand under this alternative is 6,456 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 5,061 kW. The remaining maximum demand would not exceed PG&E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given

¹ Per meeting between PG&E and the Trust, June 12, 2000.

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Table 55: Electrical Use Projection Summary

Alternative	Total Area (million gsf) (a)	Projected Energy Use (million kWh/yr)	Electricity Index (kWh/sf)	Difference from No Action (GMPA 2000) (million kWh/yr)	% Difference from No Action (GMPA 2000)	Projected Max Demand (kW)	PG&E Feeder Capacity (kW) (b)	Remaining Capacity (kW)
No Action (GMPA 2000)	5.01	47.80	9.54	N/A	N/A	6,456	6,576	120
Final Plan	5.60	50.24	8.97	2.44	5.1%	7,646	6,576	(1,070)
Final Plan Variant	4.74	45.13	9.52	(2.67)	(5.6%)	6,565	6,576	11
Resource Consolidation	5.30	54.72	10.30	6.92	14.5%	7,412	6,576	(836)
Sustainable Community	5.69	53.50	9.40	5.70	11.9%	7,871	6,576	(1,296)
Cultural Destination	5.96	56.02	9.40	8.20	17.2%	8,194	6,576	(1,618)
Minimum Management	5.96	54.15	9.08	6.35	13.3%	7,865	6,576	(1,289)

Source: Henwood Energy; Presidio Trust; PG&E; Bay Area Economics, 2001.

Notes:

- (a) Per meeting between the Presidio Trust and PG & E on 6/12/2000, regarding remaining capacity on feeders to the Presidio.
- (b) Table includes 900,000 SF of office space for LDAC project that will be served directly through PG&E.

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substation may lack capacity. Mitigation measures would ensure that adequate electrical capacity exists by providing for upgrades to the Presidio's electrical system. Furthermore, under this alternative, the Trust would maximize energy efficiency, monitor and control use, generate energy using efficient and clean technologies and purchase "green" power as needed.

Final Plan Alternative

Under the Final Plan Alternative, up to 50.24 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 8.97 kWh per square foot (see Table 55). This level of consumption is 5.1 percent greater than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 7,646 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 6,251 kW. The remaining maximum demand would not exceed PG&E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given substation may lack capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Final Plan Variant

Under the Final Plan Variant up to 45.13 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 9.52 kWh per square foot (see Table 55). This level of consumption is 5.6 percent less than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 6,565 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 5,170 kW. The remaining maximum demand would not exceed PG &E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given substation may lack

capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Resource Consolidation Alternative

Under the Resource Consolidation Alternative, up to 54.72 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 10.30 kWh per square foot (see Table 55). This level of consumption is 14.5 percent greater than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 7,412 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 6,017 kW. The remaining maximum demand not would exceed PG&E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given substation may lack capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Sustainable Community Alternative

Under the Sustainable Community Alternative, up to 53.50 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 9.40 kWh per square foot (see Table 55). This level of consumption is 11.9 percent greater than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 7,871 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 6,476 kW. The remaining maximum demand would not exceed PG&E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, though a more detailed analysis could indicate that older style transformers at a given substation may lack capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Cultural Destination Alternative

Under the Cultural Destination Alternative, up to 56.02 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 9.40 kWh per square foot (see Table 55). This level of consumption is 17.2 percent greater than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 8,194 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 6,799 kW. The remaining maximum demand is slightly greater than the capacity of PG&E's feeder capacity (6,576 kW) to on-site substations and may require off-site improvements. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given substation may lack capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

Minimum Management Alternative

Under the Minimum Management Alternative, up to 54.15 million kilowatt-hours of electricity are projected to be consumed at the Presidio annually, with an average energy consumption index of 9.08 kWh per square foot (see Table 55). This level of consumption is 13.3 percent greater than under the No Action Alternative (GMPA 2000). The projected maximum demand under this alternative is 7,865 kW. Since the release of the Draft EIS, the LDAC project has elected to receive electrical service directly through PG&E. Excluding the LDAC demand, the remaining maximum demand under this alternative is 6,470 kW. The remaining maximum demand would not exceed PG&E's 6,576 kW feeder capacity to on-site substations. Total on-site transformer capacity would not be exceeded by this projected demand, although a more detailed analysis could indicate that older style transformers at a given substation may lack capacity. Mitigation measures for this alternative would be the same as for the No Action Alternative (GMPA 2000).

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

The GMPA EIS did not include mitigation for electrical use and infrastructure.

New Mitigation

The following measures would apply to all of the alternatives.

UT-9 *Improve Existing Onsite Electrical Infrastructure.* The Trust would address on-site infrastructure capacity through utility planning, and re-wiring or replacement of existing on-site transformers to re-distribute power to high demand areas.

UT-10 *Upgrade Off-site Electrical Facilities* If required the Trust would work with PG&E to identify the necessary upgrades to off-site feeders.

UT-11 *Environmental Building Design.* Whenever possible, the Trust would incorporate the site's environmental conditions in building design solution, maximizing solar energy and utilizing natural light.

Mitigation Measure UT-13, in Energy Conservation, would also apply to this area.

Presidio Natural Gas Supply

METHODOLOGY

The natural gas demands of the various alternatives are estimated using current (1999) usage by square foot as a factor for estimating future demand. Demand under each alternative is then compared to peak demand under the military's occupation of the Presidio in 1990 to determine if adequate infrastructure exists to meet projected demand.

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If projected demand would be below natural gas demand in 1990 (6.7 million therms), it is assumed that the existing natural gas distribution infrastructure is adequate and significant upgrades are unnecessary.

Natural gas use under each alternative is also compared to consumption under the No Action Alternative (GMPA 2000), the baseline alternative.

POTENTIAL IMPACTS

DEMAND FOR NATURAL GAS

No Action Alternative (GMPA 2000)

Development under the No Action Alternative (GMPA 2000) would generate demand for up to 2.05 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.68 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

Final Plan Alternative

Development under the Final Plan Alternative would generate demand for up to 2.3 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.43 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.25 million therms greater, or 12 percent more than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

Final Plan Variant

Development under the Final Plan Variant would generate demand for up to 1.94 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.79 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.11 million therms below, or 5 percent less than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

Resource Consolidation Alternative

Development under the Resource Consolidation Alternative would generate demand for up to 2.17 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.56 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.12 million therms greater, or 6 percent more than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

Sustainable Community Alternative

Development under the Sustainable Community Alternative would generate demand for up to 2.33 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.4 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.28 million therms greater, or 14 percent more than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

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Table 56: Natural Gas Use Projection (a)

Year	Occupied Area (a) (million sf)	Gas Usage (million therms)	Gas Index (million therms/sf)		
1990	6.66	6.73	1.01		
1999	2.89	1.18	0.41		
	Occupied Area (million sf)	Gas Usage (b) (million therms)	Change from 1990 Usage (million therms)	Difference from No Action (GMPA 2000) (million therms)	% Difference from GMPA 2000
No Action (GMPA 2000)	5.01	2.05	(4.68)	N/A	N/A
Final Plan	5.60	2.30	(4.43)	0.25	12%
Final Plan Variant	4.74	1.94	(4.79)	(0.11)	(5%)
Resource Consolidation	5.30	2.17	(4.56)	0.12	6%
Sustainable Community	5.69	2.33	(4.40)	0.28	14%
Cultural Destination	5.96	2.44	(4.29)	0.39	19%
Minimum Management	5.96	2.44	(4.29)	0.39	19%

Sources: The Presidio Trust; Bay Area Economics, 2001.

Notes:

(a) Occupied Area data from Presidio Trust.

(b) 1999 Gas Index applied to proposed square footages to project gas usage.

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Cultural Destination Alternative

Development under the Cultural Destination Alternative would generate demand for up to 2.44 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.29 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.39 million therms greater, or 19 percent more than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56). Development under this alternative would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage.

Minimum Management Alternative

Development under the Minimum Management Alternative would generate demand for up to 2.44 million therms of natural gas annually, with an index of 0.41 therms/square foot. This projected demand is 4.29 million therms below the Presidio's natural gas usage in 1990, demonstrating that the Presidio's natural gas distribution system has adequate capacity to meet demand under this alternative. Natural gas usage under this alternative is 0.39 therms greater, or 19 percent more than would be consumed under the No Action Alternative (GMPA 2000) (see Table 56).

MITIGATION MEASURES

Measures Adapted from the GMPA EIS

No mitigation for natural gas was identified in the GMPA EIS.

New Mitigation

Mitigation measures listed under Energy Conservation would apply to this area. Specifically, these include UT-12 and UT-13.

Presidio Energy Conservation

METHODOLOGY

As discussed in the Affected Environment section, development activities at the Presidio must adhere to Executive Order 13123, which mandates that energy use at the Presidio must be reduced by 35 percent below 1985 levels by 2010. This analysis examines energy use at build-out (projected in 2020), rather than in 2010, assuming that energy usage at the Presidio will increase as development nears completion. Therefore, if energy usage under an alternative complies with Executive Order 13123 at build-out, it can be inferred that the alternative will also be in compliance in 2010.

Since 1985 energy usage data is unavailable, 1990 data is used as a proxy. Energy consumption at the Presidio decreased between 1985 and 1990, making 1990 a more conservative baseline for comparison. In 1990, 869,231 million British Thermal Units (BTUs) of energy were consumed at the Presidio, serving 6.664 million sf of buildings with an annual energy index of 130,437 BTU per square foot (see Table 57).

POTENTIAL IMPACTS

No Action Alternative (GMPA 2000)

Total energy usage under the No Action Alternative (GMPA 2000) is projected to reach up to 368,563 million BTU (MMBTU) annually, or 73,566 BTU per square foot. This energy consumption level represents a 44 percent reduction from 1990 levels (see Table 57). This level of reduction meets Executive Order 13123 mandates. Mitigation measures would further reduce energy consumption at the Presidio under this alternative.

ENVIRONMENTAL CONSEQUENCES

Utilities

Table 57: Energy Conservation - Executive Order 13123 Compliance (a)

	Total Area (sf)	Total Electricity (kWh/yr)	Total Gas (therms)	Total Energy (MMBTU)	Energy Index (BTU/sf)	% Reduction from 1990 (a)	Difference from No Action (GMPA 2000) (BTU/sf)	% Difference from GMPA 2000
No Action (GMPA 2000)	5,009,954	47,803,845	2,054,081	368,563	73,566	-44%	N/A	N/A
Final Plan	5,595,026	50,243,365	2,293,961	400,877	71,649	-45%	(1,917)	-2.6%
Final Plan Variant	4,735,183	45,125,952	1,941,425	348,157	73,526	-44%	(40)	N/A
Resource Consolidation	5,295,601	54,719,297	2,171,196	403,877	76,266	-42%	2,700	3.6%
Sustainable Community	5,686,756	53,504,405	2,331,570	415,768	73,112	-44%	(454)	-0.6%
Cultural Destination	5,962,044	56,020,163	2,444,438	435,641	73,069	-44%	(497)	-0.6%
Minimum Management	5,962,032	54,962,032	2,444,438	429,272	72,001	-45%	(1,565)	-2.1%

Source: Presidio Trust; Bay Area Economics, 2001.

Notes:

(a) 1990 Energy Use is 130,437 BTU/sf.

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Utilities

Final Plan Alternative

Total energy usage under the Final Plan Alternative is projected to reach up to 400,877 MMBTU annually, or 71,649 BTU per square foot. This energy consumption level represents a 45 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be up to 2.6 percent less than usage under the No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

Final Plan Variant

Total energy usage under the Final Plan Variant is projected to reach up to 348,157 MMBTU, or 73,526 BTU per square foot. This energy consumption level represents a 44 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be about the same as the usage under the No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

Resource Consolidation Alternative

Total energy usage under the Resource Consolidation Alternative is projected to reach up to 403,877 MMBTU, or 76,266 BTU per square foot. This energy consumption level represents a 42 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be up to 3.6 percent greater than usage under the No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

Sustainable Community Alternative

Total energy usage under the Sustainable Community Alternative is projected to reach up to 415,768 MMBTU, or 73,112 BTU per square foot. This energy consumption level represents a 44 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be about the same as the usage under the

No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

Cultural Destination Alternative

Total energy usage under the Cultural Destination Alternative is projected to reach up to 435,641 MMBTU, or 73,069 BTU per square foot. This energy consumption level represents a 44 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be about the same as the usage under the No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

Minimum Management Alternative

Total energy usage under the Minimum Management Alternative is projected to reach up to 429,272 MMBTU, or 72,001 BTU per square foot. This energy consumption level represents a 45 percent reduction from 1990 levels. This level of reduction meets Executive Order 13123 mandates. Total energy usage is projected to be up to 2.1 percent less than usage under the No Action Alternative (GMPA 2000) (see Table 57). Mitigation would further reduce energy consumption.

MITIGATION MEASURES

The following measures would apply to all alternatives.

Measures Adapted from the GMPA EIS

UT-12 *Energy Conservation.* The Trust would expand the energy conservation public education activities and develop specific measures to minimize building energy use for buildings to be renovated.

New Mitigation

UT-13 *Energy Conservation.* The Trust would employ the following practices to meet the goals of Executive Order 13123 and minimize the environmental impacts of energy consumption throughout the built environment at the Presidio:

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- Meet or surpass the energy conservation requirements of California Title 24 energy code during building rehabilitation where these requirements do not conflict with historic preservation objectives;
- Implement cost-effective energy conservation retrofits of buildings and utility infrastructure where these retrofits do not conflict with historical preservation objectives;
- Develop and implement energy education programs for staff, tenants and park visitors;
- Develop energy conservation and efficient energy generation demonstration projects;
- Purchase a portion of Presidio's electric needs from renewable energy sources; and
- Implement energy efficient appliance and computer purchasing programs.

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4.7 PRESIDIO TRUST OPERATIONS

METHODOLOGY

This section discusses the potential impact on park management and operations due to federal appropriations declining to zero by fiscal year 2013. It also discusses the impact due to residential and non-residential leasing revenues; the cost of building replacement, rehabilitation and removal; annual operating costs; infrastructure improvement costs; the cost of transportation services, landscaping, and natural resources management; and other economic factors.

To analyze the impact, a planning financial model was developed to simulate the financial performance of each of the EIS land use alternatives and compare the financial results among the EIS alternatives. Consistent and conservative assumptions were applied to each alternative. The Financial Analysis Technical Memorandum in Appendix K, together with its attachments, describes the financial model and its results. The attachments to the Technical Memorandum include summary financial spreadsheets for each alternative and a summary of the land use and financial assumptions of the model. A more detailed explanation of (and documentary support for) the model assumptions are contained in the "Presidio Trust Implementation Plan Financial Model Assumptions and Documentation" binder (dated May 2002) at the Trust's business office.

The primary objectives of the planning financial analysis are 1) to confirm the short-term financial self-sufficiency of each alternative by 2013; 2) to estimate the time needed to reach long-term financial sustainability, an aspect of financial self-sufficiency; and 3) to compare the financial performance of the alternatives in terms of relative revenue generation capacity, time to completion of the park enhancements, and estimated time needed to achieve a stabilized financial state.

To simulate the financial performance of the EIS alternatives, the Trust provided land use, market, phasing, financing, and operational assumptions as inputs into the financial model. The Trust's economic consultant, Sedway Group, provided other market-based assumptions, such as rental and vacancy

rates. All assumptions and backup rationale have been made available for public review and comment. The financial model uses the inputs described above and applies a series of calculations to test both short-term financial self-sufficiency and long-term financial sustainability for each alternative.

An alternative is considered to generate a significant impact if the alternative does not achieve short-term financial self-sufficiency by 2013 and/or long-term financial sustainability, as mandated by the Trust Act Public Law 104-333.

POTENTIAL IMPACTS

No Action Alternative (GMPA 2000)

The planning financial model projects that in Fiscal Year (FY) 2013, under the No Action Alternative (GMPA 2000), Trust operations would generate approximately \$51 million in revenues and approximately \$48 million in total annual operating expenses. Capital projects are estimated to be completed by about 2040 and the implementation phase at the Presidio is estimated to be completed between approximately 2050 and 2055. All projections are made in 2001 constant dollars. These data are shown in Tables 58 and 59.

The No Action Alternative (GMPA 2000) did not reach financial self-sufficiency when first analyzed as a scoping alternative. As a result of modifying the financial assumptions, most significantly by extending the time for demolition of Wherry housing units, the alternative now would meet financial self-sufficiency in the EIS analysis, but would be more marginal than some other alternatives, because it would not be able to bear modest downturns in market rents and remain financially viable and requires the longest period to complete the capital program and fully-fund reserves. If, rather than assuming the timing of Wherry Housing demolition called for in the 1994 GMPA, the demolition was phased over a 30-year period, the financial performance of this alternative would improve. (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues would cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenues to meet

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Table 58: Fiscal Year 2013 Financial Snapshot

Data In Millions	No Action						
	(GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Constant FY 2001 dollars							
Total Square Feet (millions)							
Total Square Feet (millions)	5.0	5.6	4.7	5.3	5.7	6.0	6.0
Cash Flow Summary							
Total Annual Revenues	\$51.0	\$71.9	\$61.4	\$62.2	\$72.3	\$65.0	\$86.7
Less: Operating Expenses	(\$42.7)	(\$43.9)	(\$43.8)	(\$43.8)	(\$43.9)	(\$43.8)	(\$44.7)
Less: Programs	(\$2.0)	(\$3.5)	(\$2.0)	(\$5.0)	(\$5.0)	(\$6.0)	(\$2.0)
Less: Financing	(\$3.0)	(\$3.0)	(\$3.0)	(\$3.0)	(\$3.0)	(\$3.0)	(\$3.0)
Total Annual Operating Expenses	(\$47.7)	(\$50.4)	(\$48.8)	(\$51.8)	(\$51.9)	(\$52.8)	(\$49.7)
Total Annual Revenues Less Total Annual Operating Expenses (a)	\$3.3	\$21.5	\$12.6	\$10.4	\$20.4	\$12.2	\$37.0
Financially Self-Sufficient?	YES	YES	YES	YES	YES	YES	YES
Funds Available for Capital Projects	\$3.3	\$21.5	\$12.6	\$10.4	\$20.4	\$12.2	\$37.0
Less: Capital Costs	(\$3.4)	(\$21.5)	(\$12.6)	(\$12.7)	(\$22.2)	(\$8.2)	(\$37.0)
Less: Capital Replacement Set-Asides (b)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2013 Net Cash Flow (c)	(\$0.1)	\$0.0	\$0.0	(\$2.3)	(\$1.8)	\$4.0	\$0.0
Capital Projects							
Total Capital Projects	\$519	\$589	\$614	\$494	\$525	\$562	\$479
Funded Capital Projects (as of 2013)	\$255	\$334	\$295	\$291	\$330	\$279	\$386
Unfunded Projects (as of 2013)	\$264	\$255	\$319	\$203	\$195	\$283	\$93
Capital Replacement Fund Deficit	(\$50)	(\$54)	(\$54)	(\$50)	(\$53)	(\$46)	(\$57)

Notes:

(a) Financial self-sufficiency, as required by congressional mandate, is defined for the purposes of this analysis as FY 2013 total annual revenues in excess of FY 2013 total annual operating expenses.

(b) Capital replacement set-asides begin after the implementation phase has ended.

(c) Annual negative cash flow in any given year is covered by excess cash flow available from prior years.

These models have been prepared to compare different planning alternatives. They represent an illustration of what the financial results of the planning alternatives could look like based upon specific market, timing, financing, and operational assumptions. The results should not be relied upon or interpreted as a budgetary or accounting report or as controlling future implementation plans, decisions, or actions of the Trust.

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Table 59: Capital Projects, Programs, and Cash Flow Summary

Data in Years or Millions Constant FY 2001 dollars	No Action (GMPA 2000)	Final Plan	Final Plan Variant	Resource Consolidation	Sustainable Community	Cultural Destination	Minimum Management
Total Square Feet (millions)	5.0	5.6	4.7	5.3	5.7	6.0	6.0
Capital Projects							
Total Capital Costs	\$519	\$589	\$614	\$494	\$525	\$562	\$479
Funded Projects as of 2013	\$255	\$334	\$295	\$291	\$330	\$279	\$386
Unfunded Projects as of 2013	\$264	\$255	\$319	\$203	\$195	\$283	\$93
Year Capital Program Completed (a)	approx. 2040	2025	approx. 20 35	2030	2023	approx. 2030 to 2035	2016
Year Implementation Phase Is Completed (a) (b)	approx. 2050 to 2055	2029	approx. 2045	approx. 2040	2029	approx. 2040	2018
Programs							
Annual Program Expenditures (c)	(\$2.0)	(\$5.0)	(\$2.0)	(\$8.0)	(\$8.0)	(\$10.0)	(\$2.0)

Notes:

(a) Completion years that fall beyond the 30-year timeframe of the financial model are approximations.

(b) The implementation phase is terminated after the completion of all capital projects and the funding of all capital replacement reserves.

(c) Stabilized annual program expenses (at 2020).

These models have been prepared to compare different planning alternatives. They represent an illustration of what the financial results of the planning alternatives could look like based upon specific market, timing, financing, and operational assumptions. The results should not be relied upon or interpreted as a budgetary or accounting report or as controlling future implementation plans, decisions, or actions of the Presidio Trust.

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long-term capital needs), no adverse impacts on park operations are anticipated under build-out of the No Action Alternative (GMPA 2000). A relatively low level of public programs support would be fully funded and on-going operations, capital projects and replacements would be funded over the long-term.

Building Capital Costs – The building-related capital projects (including demolition) needed to build-out the No Action Alternative (GMPA 2000) are estimated at \$409 million, of which \$187 million is estimated to be funded by 2013.

Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the No Action Alternative (GMPA 2000) are estimated at \$110 million, of which \$67 million is estimated to be completed by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

With regard to infrastructure reserves, the PTMP financial model assumes that no reserves would be funded until the entire capital program is completed, because reserve set-asides are considered less necessary on recent capital improvements.

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumes that parking revenue will be zero, net of transit services and transportation management programs.

Operations and Staffing – Under the No Action Alternative (GMPA 2000), approximately \$43 million in operating expenses and \$2 million in program expenses are projected for 2013.

The PTMP financial model assumes an operating cost of \$6 million annually for public safety expenses. Model assumptions regarding public safety operating expenses are based upon existing agreements with the U.S. Park Police and NPS for law enforcement, fire prevention and suppression, and emergency medical response services. Public safety staffing needs are

described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the No Action Alternative (GMPA 2000) are estimated to total \$51 million in 2013. The primary revenue-generating uses are office and residential space, which are estimated to generate \$11 million and \$17 million respectively in rental revenue in 2013.

Final Plan Alternative

The planning financial model projects that, in FY 2013 under the Final Plan Alternative, Trust operations are estimated to generate approximately \$72 million in revenues and approximately \$50 million in total annual operating expenditures. Capital projects are estimated to be completed by 2025, and the implementation phase at the Presidio is estimated to be completed in 2029. All projections are made in 2001 constant dollars. These data are shown in Tables 58 and 59.

With a modest decline in market rents, this alternative would be moderately negatively impacted, but less affected than the No Action Alternative (GMPA 2000). It would remain self-sufficient and sustainable, and the implementation phase would be extended by only about five years (to 2035). (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenue to meet long-term capital needs), no adverse impacts on park operations are anticipated under build-out of the Final Plan Alternative. A moderate level (stabilized in 2020 at \$5 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements would be funded over the long-term. (See Appendix K).

Building Capital Costs – The building-related capital projects (including demolition) needed to build-out the Final Plan Alternative are estimated at \$477 million, of which \$265 million is estimated to be funded by 2013.

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Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Final Plan Alternative are estimated at \$112 million, of which \$69 million is estimated to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumptions regarding parking revenue, transit services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Final Plan Alternative, approximately \$44 million in operating expenses and \$3.5 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Final Plan Alternative are estimated to total \$72 million in 2013. The primary revenue-generating uses are office and residential space, which are projected to generate \$20 million and \$24 million respectively in rental revenue in 2013.

Final Plan Variant

The planning financial model projects that in FY 2013 under the Final Plan Variant, Trust operations are estimated to generate approximately \$61 million in revenues and approximately \$49 million in total annual operating expenditures. Capital projects are estimated to be completed by about 2035,

and the implementation phase at the Presidio is projected to be completed in approximately 2045. All projections are made in 2001 constant dollars. These data are shown in Tables 58 and 59.

With a modest decline in market rents, the Final Plan Variant would be significantly negatively impacted (but less affected than the No Action Alternative (GMPA 2000)), have slim operating margins after 2013, and have an extended implementation phase (to year 2060), but would remain financially sustainable. (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenue to meet long-term capital needs), no adverse impacts on park operations are anticipated under build-out of the Final Plan Variant. A relatively low level (\$2 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements would be funded over the long-term. (See Appendix K).

Building Capital Costs – The building-related capital projects (including demolition) needed to build-out the Final Plan Variant are estimated at \$502 million, of which \$222 million is estimated to be funded by 2013.

Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Final Plan Variant are estimated at \$112 million, of which \$73 million is projected to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumptions regarding parking revenue, transit

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services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Final Plan Variant, approximately \$44 million in operating expenses and \$2 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Final Plan Variant are estimated to total \$61 million in 2013. The primary revenue-generating uses are office and residential space, which would generate \$12 million and \$25 million respectively in rental revenue in 2013.

Resource Consolidation Alternative

The planning financial model projects that, in FY 2013 under the Resource Consolidation Alternative, Trust operations are estimated to generate approximately \$62 million in revenues and approximately \$52 million in total annual operating expenditures. Capital projects are estimated to be completed by about 2030 and the implementation phase at the Presidio is projected to be completed in about 2040. These data are shown in Tables 58 and 59.

With a modest decline in market rents, this alternative would be negatively impacted, but less affected than the No Action Alternative (GMPA 2000). It would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed and the implementation phase would be extended by about 20 years (to between 2060 and 2065). (See Appendix K).

Since the alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenues to meet long-term capital needs), no adverse impacts to park operations are anticipated under

build-out of existing conditions. A relatively moderate level (stabilized in 2020 at \$8 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements would be funded over the long-term.

Building Capital Costs – The building-related capital projects (including demolition) needed to build-out the Resource Consolidation Alternative are estimated at \$366 million, of which \$208 million are projected to be funded by 2013.

Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Resource Consolidation Alternative are estimated at \$128 million, of which \$83 million is projected to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumptions regarding parking revenue, transit services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Resource Consolidation Alternative, approximately \$44 million in operating expenses and \$5 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Resource Consolidation

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Alternative are projected to total about \$62 million in 2013. The primary revenue-generating uses are office and residential space, which are estimated to generate \$23 and \$17 million in rental revenue in 2013 respectively.

Sustainable Community Alternative

The planning financial model projects that in FY 2013 under the Sustainable Community Alternative, Trust operations would generate about \$72 million in revenues and about \$52 million in total annual operating expenditures.

Capital projects are projected to be completed by 2023 and the implementation phase at the Presidio is estimated to be completed by 2029. These data are shown in Tables 58 and 59.

With a modest decline in market rents, this alternative would be moderately negatively impacted, but less affected than the No Action Alternative (GMPA 2000). It would remain self-sufficient and sustainable, and the implementation phase would be extended by only about five years (to year 2035). (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenue to meet long-term capital needs), no adverse impacts to park operations are anticipated under build-out of the Sustainable Community Alternative. A relatively moderate level (stabilized in 2020 at \$8 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements will be funded over the long-term.

Building Capital Costs – The cost of the building-related capital projects (including demolition) needed to build-out the Sustainable Community Alternative is estimated at about \$417 million, of which \$259 million are projected to be funded by 2013.

Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Sustainable Community Alternative are estimated at \$108 million, of which \$71 million are projected to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under

the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumptions regarding parking revenue, transit services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Sustainable Community Alternative, approximately \$44 million in operating expenses and \$5 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Sustainable Community Alternative are estimated to total \$72 million in 2013. The primary revenue-generating uses are office and residential space, which are each projected to generate \$22 million in rental revenue in 2013.

Cultural Destination Alternative

The planning financial model projects that in FY 2013 under the Cultural Destination Alternative, Trust operations would generate about \$65 million in revenues and about \$53 million in total annual operating expenditures. Capital projects are projected to be completed between about 2030 and 2035, and the implementation phase at the Presidio is estimated to be completed in about 2040. These data are shown in Tables 58 and 59.

With a modest decline in market rents, this alternative would be negatively impacted, but less affected than the No Action Alternative (GMPA 2000). It

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would remain self-sufficient and sustainable, although rehabilitation of non-residential buildings would be delayed, and the implementation phase would be extended by about 20 years (to year 2060). (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenue to meet long-term capital needs), no adverse impacts to park operations are anticipated under build-out of existing conditions. A relatively high level (stabilized in 2020 at \$10 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements will be funded over the long-term.

Building Capital Costs – The cost of building-related capital projects (including demolition) needed to build-out the Cultural Destination Alternative is estimated at \$443 million, of which \$200 million is projected to be funded by 2013.

Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Cultural Destination Alternative are estimated at \$121 million, of which \$78 million is projected to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, and grounds. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – A description of the transportation services and systems under this alternative is included in the alternatives section. The PTMP financial model assumptions regarding parking revenue, transit services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Cultural Destination Alternative, approximately \$44 million in operating expenses and \$6 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Cultural Destination Alternative are projected to total \$65 million in 2013. The primary revenue-generating uses are office and residential space, which are estimated to generate \$21 and \$18 million respectively in rental revenue in 2013.

Minimum Management Alternative

The planning financial model projects that in FY 2013 under the Minimum Management Alternative, Trust operations would generate about \$87 million in revenues and about \$50 million in total annual operating expenditures. Capital projects are projected to be completed in 2016 and the implementation phase at the Presidio is estimated to be completed in 2018. All projections are made in 2001 constant dollars. These data are shown in Tables 58 and 59.

This alternative has the strongest financial result and could bear modest to significant declines in market rents and still be viable. It would remain self-sufficient and sustainable, and the implementation phase, extended by only two years, would be complete by 2020. (See Appendix K).

Since this alternative would reach financial self-sufficiency by 2013 (revenues cover expenditures without need of further annual appropriations) and achieve long-term sustainability (generates sufficient revenue to meet long-term capital needs), no adverse impacts on park operations are anticipated under build-out of the Minimum Management Alternative. A relatively low level (\$2 million annually) of public programs support would be fully funded and on-going operations, capital projects and replacements would be funded over the long-term.

Building Capital Costs – The building-related capital projects (including demolition) needed to build-out the Minimum Management Alternative are estimated at \$376 million, of which \$318 million is estimated to be funded by 2013.

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Infrastructure and Non-Building Capital Costs – The infrastructure and non-building capital costs under the Minimum Management Alternative are estimated at \$103 million, of which \$67 is projected to be funded by 2013. These include rehabilitation for utilities, telecommunications systems, roads, grounds, and special planning district projects. Infrastructure systems are described in more detail under the Affected Environment and Environmental Consequences Utilities and Transportation and Circulation sections.

Assumptions regarding infrastructure reserves are the same as under the No Action Alternative (GMPA 2000).

Transportation Services – With the exception of Doyle Drive reconstruction and improvements associated with the 23-acre Letterman project, no other major road improvements are planned. Parking would continue to be provided in currently designated areas. Existing public transit would continue with no additional transit services. The PTMP financial model assumptions regarding parking revenue, transit services, and transportation management programs are the same as under the No Action Alternative (GMPA 2000).

Operations and Staffing – Under the Minimum Management Alternative, approximately \$45 million in operating expenses and \$2 million in program expenses are projected for 2013.

Model assumptions regarding operations and staffing are the same as under the No Action Alternative (GMPA 2000). Public safety staffing needs are described in more detail under the Affected Environment and Environmental Consequences Public Safety sections.

Revenues – Under the land use, market, phasing, financing, and operational assumptions of the model, revenues under the Minimum Management Alternative are projected to total \$87 million in 2013. The primary revenue-generating uses are office space and residential space, which are estimated to generate \$32 million and \$31 million respectively in rental revenue in 2013.

MITIGATION MEASURES

No mitigation required.

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4.8 CUMULATIVE IMPACTS

Cumulative impacts result when the impacts arising from an action are added to those of other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time (40 CFR Section 1508.7).

When evaluating the potential impacts of specific alternatives, the direct and indirect consequences of implementing an alternative are examined. When evaluating cumulative impacts, the potential direct and indirect impacts of an alternative are reviewed in light of other activities that have occurred in the past and are likely to occur over time in the future. In other words, the cumulative analysis considers impacts in light of all the activities affecting a resource, not just the project in isolation.

When considering cumulative impacts, the geographic area to be examined can vary, depending on the resource topic. However, the context for cumulative impact evaluation is generally similar to the context for project impact evaluation. For example, the affected environment for a specific historic structure would be the site of the structure and a reasonable area around that locale, or the National Historic Landmark District itself.

Identifying cumulative effects can be a complex task. A question necessarily arises as to how far back to look to understand how current site conditions came about. Likewise, when looking forward at all “reasonably foreseeable future actions” there is a question of what is reasonably foreseeable. However, some of the characteristics of the alternatives evaluated in this EIS tend to simplify the assessment of cumulative effects. Specifically, all alternatives would result in fewer acres of land in developed uses and more acreage in open space, as compared to current conditions. While the mix of land uses would vary among the alternatives, all alternatives would also have the same or less built space (i.e., square footage) than current conditions.

The discussion of cumulative impacts below is organized by environmental resource topic. Table 62 indicates the plan, program, and/or projects that provide the context for evaluating cumulative impacts.

4.8.1 CULTURAL RESOURCES

IMPACTS ON HISTORIC RESOURCES AND THE CULTURAL LANDSCAPE

The analyses of potential impacts associated with each alternative address the potential for Trust actions to result in an adverse effect on individual historic resources, the Presidio cultural landscape, and on the overall significance of the NHLD, which encompasses both Areas A and B. Therefore, the analysis considers the potential for cumulative effects on cultural resources in Presidio Areas A and B.

Potential impacts associated with building rehabilitation and enhancements to the Presidio cultural landscape under each alternative would be considered beneficial, due to their conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, as well as the PTMP Planning Principles and Planning District Guidelines. This would have the potential for beneficial cumulative effects.

All of the alternatives except for Minimum Management would involve some building demolition, although only the No Action Alternative (GMPA 2000), the Resource Consolidation Alternative and the Final Plan Variant specify that individual historic buildings will be included among the demolitions. Despite the proposed demolitions, the 1994 GMPA EIS concluded that cumulative effects on historic resources would be beneficial due to the extent of rehabilitation proposed. Consistent with planning principles articulated in the Final Plan, other EIS alternatives would also involve substantial rehabilitation in conformance with the Secretary of the Interior's Standards. Only the Resource Consolidation Alternative would include demolition (e.g., removal of the PSH complex) that could affect the integrity of the NHLD. The impacts of these two alternatives, when viewed in combination with the Doyle Drive projects, could be more severe, however, their overall effect on historic resources would remain beneficial due to the extent of building rehabilitation they propose.

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Table 60: Cumulative Context for Project and Cumulative Impact Analysis

Plans	Programs	Project Impact Zones	Projects
<i>Mountain Lake Enhancement Plan</i>	PresidioGo (Presidio Shuttle)	Presidio Areas A and B	Letterman Digital Arts Center (LDAC)
<i>Presidio Trails and Bikeways Master Plan</i>	Presidio Trust Water Resource Management	Presidio and Adjacent Neighborhoods	Doyle Drive Reconstruction
<i>Presidio Vegetation Management Plan</i>	Community Stewardship Programs	City and County of San Francisco	Presidio Environmental Remediation Projects
<i>Crissy Field Marsh Study and Project</i>	NPS's Presidio operations, GGNRA, other regional recreational opportunities	San Francisco Bay Region	East Fort Baker Retreat and Conference Center
<i>Tennessee Hollow Restoration Project</i>		Muni/GGT Service Areas	Micro-Cogeneration and Other Energy Efficiency Actions
<i>USFWS Recovery Plans</i>		San Francisco Air Quality Basin	Presidio Water Recycling Project
<i>San Francisco Urban Water Management Plan</i>			Golden Gate Bridge Seismic Retrofit Project
<i>Baylands Ecosystem Goals Project (Central Bay)</i>			
<i>Clean Air Plan (San Francisco Air Quality Basin)</i>			
<i>San Francisco Bay Area Regional Transportation Plan</i> (as included in SFCTA model)			

Impacts associated with new construction activities would be considered less than significant, due to the limits set on the level of new construction, the commitment to future planning and environmental analysis for a proposed undertaking, the Final Plan's policy to preserve the integrity of the NHLD and to follow the Planning Principles and Planning District Guidelines presented in the Final Plan, and the requirement for further consultation under Section 106 of the National Historic Preservation Act. Thus, no significant cumulative effects of new construction have been identified.

The potential for cumulative impacts affecting resources in the region was assessed in the GMPA EIS, which concluded – despite the potential for specified demolitions within the Presidio – that the rehabilitation and preservation actions proposed “would have a positive cumulative effect on regional efforts to preserve [important] resources and their settings.” Given constraints on demolition and new construction through commitments to resource preservation contained in the Trust Act, the NHPA, the PTMP Planning Principles and Planning District Guidelines provided in the Final Plan and applicable to all alternatives (Final EIS Appendix B), and a commitment to additional planning and environmental analysis to determine the full effects of proposed actions, this conclusion remains valid for all alternatives. The terms of the final Programmatic Agreement lay the

framework for the necessary additional consultation and review process needed for proposed undertakings that could have a significant effect on cultural resources at the Presidio; through this process, as well as with additional planning and public input, the Trust will ensure the preservation and protection of the Presidio's NHLD status.

ARCHAEOLOGICAL RESOURCES

The cumulative context for archaeological resources includes projects in Areas A or B that could disturb or destroy archaeological resources during excavation or grading. Such projects, in addition to the EIS alternatives, include the Doyle Drive Reconstruction Project, the Mountain Lake Enhancement Plan, the Presidio Trails and Bikeways Master Plan, and the LDAC project. The Tennessee Hollow project and any proposed expansion of Crissy Marsh cannot be evaluated until specific restoration/expansion alternatives are identified.

Cumulative impacts on known prehistoric archaeological sites or historic archaeological resources are, in general, not expected to be adverse. Possible exceptions include prehistoric and historic sites in the Crissy Field Planning District, which could be subjected to impacts from the Doyle Drive

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Reconstruction Project and any expansion of Crissy Field Marsh. In particular, for the Doyle Drive Reconstruction Project, the alternatives with below-ground or tunnel features pose the greatest threat to buried prehistoric and historic archaeological sites. The Federal Highway Administration and Caltrans will consider impacts to archaeological sites from each of the construction alternatives. The Trust, in partnership with the NPS and the Golden Gate National Parks Association, has initiated the Crissy Field Marsh Expansion Technical Study (Marsh Study). The Marsh Study will consider a broad array of options to achieve long-term ecological viability of Crissy Marsh. The Marsh Study itself will have no cumulative effect on archaeological resources because it will not develop alternatives, it will provide a technical basis to inform a later environmental review process. As such, it would be speculative to predict specific impacts on archaeological resources from marsh expansion or Tennessee Hollow restoration until specific alternatives are identified.

The Mountain Lake enhancement is an ongoing project for which an archaeological management assessment will be prepared prior to implementation. The lake and its original shoreline have the potential for prehistoric archaeological sites and for remains of the 1776 de Anza Spanish encampment. An archaeological field survey and testing program will be conducted and the project will be redesigned if necessary to avoid impacts to significant archaeological sites.

No cumulative impacts on archaeological resources are expected from the Presidio Trails and Bikeways Master Plan for which there is agreement to redesign routes and facilities to avoid all such effects. The 23-acre LDAC project is also not expected to contribute to cumulative archaeological impacts, because no evidence of buried archaeological sites was found during a recent investigation, archaeological monitoring will take place during the demolition and new construction phases, and the process defined in the Programmatic Agreement for the Letterman Project will be adhered to.

Because implementation actions under the PTMP EIS alternatives and the above projects will involve site investigations prior to excavation and monitoring for archaeological resources as needed during excavation, the

likelihood that archaeological resources would be destroyed or damaged without appropriate attention to recordation and recovery would be minimized. Therefore, cumulative impacts are not expected to be significant.

4.8.2 NATURAL RESOURCES

BIOLOGICAL RESOURCES

Although most of the Presidio's remaining natural communities are small, and often isolated, they provide an essential refuge for a diversity of native plants communities and associated special-status plant species, some of which have been almost entirely lost in San Francisco (Vasey 1996). Thus, the Presidio is a significant contributor to the region's biological diversity. These natural communities and other open space features also provide essential habitat for several hundred bird species, some of which are considered extirpated and others rare within the San Francisco bioregion. Many of these species have evolved with, and require the unique habitat-types found on the Presidio which are dependent on specific aspect (exposure to wind), elevation, slope, and soil conditions that are geographically specific, and cannot be duplicated elsewhere.

The San Francisco Bay Area is also one of six "hotspots" within the nation identified by the Nature Conservancy as requiring critical attention to improve and protect the region's current biological diversity. The selected areas support high levels of biological richness, and have the highest percentage of species that are either imperiled or rare. Some plant species that were historically found on the Presidio, such as the Franciscan manzanita, are extinct, others, such as the Marin dwarf flax, have been recently (within the past decade) locally extirpated from regions within the Presidio due to increased competition with invasive non-native species. Wildlife richness has also been greatly reduced, with many larger mammals no longer found on the Presidio, and other species, such as the Xerces blue butterfly, now extinct, with its last known sighting in the Lobos Valley on the Presidio.

During the past decade, community groups, the NPS, the GGNPA, and natural resources stewards have protected and restored important habitat

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connections and rare plant communities, as well as controlled and reduced some of the most invasive threats to the Presidio's biological resources. These efforts have led to restoration of several large areas including the Lobos Creek Dunes, Inspiration Point grasslands and components of the Crissy Marsh and dune systems. Most recently the Trust has coordinated with the NPS to implement VMP pilot projects and as completed the planning phase of the Mountain Lake Enhancement Plan. These efforts will result in increased species richness, the reintroduction and expansion of endangered species populations, and a net increase in habitat for native communities and wetland systems. Actions under the PTMP alternatives (such as habitat management and restoration) would contribute positively to these efforts, but new (replacement) construction and land use activities may have site-specific impacts that would require mitigation.

Other projects and programs that could contribute cumulatively to biological effects include the Presidio Trails and Bikeways Master Plan, the Doyle Drive Reconstruction Project, environmental remediation activities, VMP, Mountain Lake Enhancement and Restoration Program, Crissy potential Marsh expansion and Tennessee Hollow restoration, actions undertaken to implement USFWS recovery plans for several listed plant species, and routine maintenance and operations. Each of these activities are in various stages of development, some still in the alternatives development phase, but all could have both beneficial and negative short-term and long-term impacts on the Presidio's biological resources. A brief discussion of each is provided below.

Construction of the Doyle Drive tunnel through the bluffs above Crissy Field has been identified as one potential action. The lead agencies for this project (San Francisco County Transportation Authority, Caltrans and FHWA) are refining alternatives, which will be subject to environmental review. If the tunnel component was eventually selected, it would most likely have an unavoidable adverse biological impact on the eastern segment of the bluffs, potentially resulting in a change to the hydrologic regime and loss and/or alteration of the localized vegetation richness and wetland habitat values. Another action also being considered at this time is the construction of a tunnel under the potential Tennessee Hollow creek and Crissy Marsh interface. Construction of the tunnel could impact localized hydrogeology,

affecting the establishment of a healthy ecotone between Tennessee Hollow and Crissy Marsh. Elevated structures within the same footprint could affect the establishment of a diversity of vegetation species associated with that ecotone, depending upon the degree of shading. Increased noise, debris and dust from Doyle Drive construction activities adjacent to the marsh system and the western bluffs could also impact wildlife use. All of these issues will be the subject of an environmental analysis, which will include the development of mitigation measures to minimize where possible, adverse impacts. Because this analysis has not been conducted, and the refinement of alternatives is still underway, it would be highly speculative to attempt to precisely predict specific impacts on the biological resources of the Presidio. For the purposes of this cumulative analysis, it is assumed that some type of localized impact along the existing Doyle Drive alignment would occur.

The NPS and Trust are working cooperatively to prepare a draft Presidio Trails and Bikeways Master Plan for the Presidio. The draft Plan and corresponding Environmental Assessment (EA) is expected to be released for public review and comment in late 2002. Based on the public planning process completed to date, it appears that several possible actions in the plan could contribute cumulatively to biological impacts. In particular is the proposed removal of selected undesignated trails that currently bisect wetland features, or fragment much of the serpentine bluff habitat. If implemented, this action could have a beneficial impact on those areas. Proposed trail alignments that would maintain the same alignment within sensitive areas could continue to affect those habitats. Other proposed multimodal trail alignments could directly affect habitat for special status species in the southwestern section of the Presidio, and indirectly contribute to localized disturbance of wildlife. However, in general, it is anticipated that native plant communities and associated wildlife and special-status species would benefit by the management actions expected in the plan.

The Presidio's environmental remediation program is an ongoing process involving site cleanup of hazardous substances, under CERCLA, petroleum contamination, and lead in soils cleanup. Site remediation activities include excavation of contaminated materials, construction of protective caps, and monitoring of groundwater resources. The majority of clean up activities at the Presidio are being addressed in the Feasibility Study which is evaluating

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cleanup alternatives for each site and will be used as the basis to select final cleanup actions at a number of sites. Small-scale projects and other remediation activities not covered by the program will be subject to the Trust's NEPA review process, and will be conditioned with the coordination and mitigation actions to avoid or minimize potential impacts. The Feasibility Study identifies the location of known contaminants and proposed remedial actions and identifies cleanup standards to ensure the protection of human health and the environment (applicable or relevant and appropriate requirements or ARARs). Based on the draft documents, remedial activities would occur within the following natural habitat areas: Inspiration Point, Crissy Field, Tennessee Hollow, dune and wetland habitats north of the PSH Planning District, and the western dune and serpentine bluff habitat. It is anticipated that remedies would occur within or directly adjacent to habitat for the San Francisco lessingia, the Raven's manzanita, and the Presidio clarkia, resulting in the potential loss of individuals in the Inspiration Point and Lobos Valley areas. Activities would also occur within habitat for several other rare species, including the coast rock cress, San Francisco campion, San Francisco wallflower and San Francisco owl's clover, as well as within and adjacent to wetland habitat. Implementation of the Environmental Remediation Program would also benefit native plant communities and associated wildlife and special-status species by coordinating subsequent habitat restoration efforts with implementation of the PTMP and the VMP. Coordination would ensure that habitat disturbed during environmental remediation activities would be restored to the appropriate ecological community in a timely manner, benefiting special-status species, native plant communities and wildlife. Cleanup standards (ARARs) selected for each remediation site ensure both short-term and long-term protection and enhancement of natural resources.

The USFWS has adopted or is in the process of reviewing draft Recovery Plans for 4 species of federally-protected plants occurring within the Presidio: Marin dwarf flax, Presidio clarkia, Raven's manzanita, and San Francisco lessingia. The underlying goal of these Recovery Plans is to enlarge existing populations and provide for long-term conservation, with the ultimate objective being declassification of the species as threatened or endangered. These plans include specific recovery actions (i.e., restoration activities) that are needed to successfully meet the declassification objective.

Implementation of these plans will have a beneficial effect on special status species within the Presidio. The Trust will coordinate PTMP activities with the USFWS regarding these plans.

In 2001, the NPS and the GGNPA completed the Crissy Field Marsh. Within the northern waterfront area of the Presidio, a series of natural, cultural and recreational features were created. From a biological perspective, this action had a substantial beneficial effect on the native plant communities and wildlife habitat occurring within the Presidio. Specifically, this Crissy Field (Area A) project established a new 18-acre tidal marsh and 14-acre northern foredune community in the Presidio. The Trust, in partnership with the NPS and the Golden Gate National Parks Association, has initiated the Crissy Field Marsh Expansion Technical Study (Marsh Study). The Marsh Study will consider a broad array of options to achieve long-term ecological viability of Crissy Marsh. The Marsh Study itself will have no cumulative effect on biological resources because it will not develop alternatives, it will provide a technical basis to inform a later environmental review process. As such, it would be speculative to predict specific impacts on biological resources. Generally, expansion is expected to have a beneficial effect on the marsh and related native plant and wildlife habitat.

VMP implementation of the pilot project and other phases of the VMP, the Mountain Lake Enhancement Plan, and proposed Presidio-based restoration activities are anticipated to promote the USFWS Recovery Plans for several listed plant species; however, these actions could result in some short-term biological impacts. Potential short-term impacts could include impacts to wildlife species resulting from temporary losses of vegetation cover or conversions of vegetation communities and assemblages. Over the long-term, however, these actions would have a beneficial affect for special-status species, the natural plant communities that support them, and the wildlife populations with which those communities are associated.

Management of the Presidio as a park requires implementing a variety of maintenance and routine operational activities. These activities include the upkeep of the site's infrastructure (i.e., cleaning of storm drains, fixing leaking pipes, roadway maintenance, etc.), maintaining historic buildings

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and landscapes, and other day-to-day activities. These activities have the potential to disrupt wildlife and plant communities at the park. To minimize potential impacts to natural resources, the Trust implements standard conditions and management practices to protect resources when work occurs within sensitive areas. Examples of these conditions include restrictions on the timing of maintenance activities to avoid disturbance to nesting wildlife, use of buffer areas to avoid sensitive plant communities, and consultation with resource experts. Projects which could have a potential impact based on their location or the intensity of the proposed activities, are subjected to the Trust's NEPA review process and conditions are applied to ensure that impacts are minimized or avoided.

In conclusion, programs and projects could contribute cumulatively to biological impacts at the Presidio. These projects/programs are in varying stages of development and implementation, and include activities being managed by outside agencies.

Overall, these activities, coupled with potential PTMP actions could contribute cumulatively to the effects on special-status plant, native plant community, and wildlife at the Presidio. PTMP mitigation would help reduce these impacts, and protect these resources through the timely ecological restoration of disturbed remediation areas and limiting the amount of concurrent habitat disturbance (Presidio-wide). In addition, long-term wildlife and vegetation monitoring as mitigation in this EIS would help create, and maintain comprehensive data on the biological resources at the Presidio. (All monitors would be trained to minimize potential disturbances associated with data collection.) Overall, these data will play an important role in future site-specific planning and environmental review activities, as well as the future evaluation of cumulative projects.

WATER RESOURCES

The proposed reconstruction of Doyle Drive is still in the planning and environmental review stages; however, several draft concepts for potential alternatives have been identified. One of these preliminary draft alternatives would involve construction of a Doyle Drive tunnel, which could result in a change to the hydrologic regime and loss and/or alteration of the localized wetland features and processes, vegetation richness and associated wetland

habitat values. The tunnel could also affect establishment of a healthy functioning wetland system between the freshwater inflow of Tennessee Hollow and Crissy Marsh.

Removal of the majority of undesignated (e.g., "social") trails followed by habitat restoration, as called for in the adopted Presidio Vegetation Management Plan and proposed Presidio Trails and Bikeways Master Plan, would likely have a beneficial impact on wetland features.

Clean up of the Presidio's numerous environmental remediation sites would occur within or directly adjacent to wetland habitats, and could result in either the short-term or long-term redirection of surface and groundwater flow within these areas. However, it is anticipated that the programs' long-term beneficial impacts to wetland features would exceed the short-term impacts by their coordination of subsequent habitat restoration efforts with implementation of the PTMP and the VMP. Appropriate mitigation measures would be identified to ensure both short-term and long-term protection and enhancement of wetland resources.

Finally, the proposed Mountain Lake Enhancement Plan would benefit native freshwater marsh and riparian communities and water quality values through restoration and management activities. This beneficial effect would contribute cumulatively to the water resources within the Presidio.

While the Doyle Drive Reconstruction Project could have an adverse effect on wetlands, the combined effect of the above projects and the PTMP alternatives (excluding Minimum Management) would be cumulatively beneficial, because there would be a net increase in wetlands and associated habitat values at the Presidio as a result of the PTMP alternatives and other projects described above.

VISUAL RESOURCES

The cumulative context of the Presidio's visual environment would be the Presidio itself and the adjacent areas in the City and County of San Francisco. In addition to physical changes associated with the PTMP, there are other planning efforts underway that could affect the Presidio's visual resources, including the Presidio Trails and Bikeways Master Plan, the

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Mountain Lake Enhancement Plan, the Doyle Drive Reconstruction Project, and the VMP. In addition, changes within the 23-acre site in the Letterman Planning District would include replacement of the existing 10-story former hospital, which would provide improved views within the Presidio.

Removal of the majority of undesignated trails and revegetation, as called for in the Presidio Trails and Bikeways Master Plan, could have a beneficial effect on the visual quality in the park as the areas are returned to a natural state. Actions in the Mountain Lake Enhancement Plan would also enhance native vegetation, but would not substantially alter the visual environment in the Presidio.

Construction of improvements to Doyle Drive would generally improve views by placing portions of the roadway at or below ground level.

Over the long term, visual qualities on the area will be enhanced by activities in the VMP. For example, changes to the pygmy forest along the southern boundary of the park would enhance views from residences adjacent to the Presidio. The management of vegetation and the removal of non-historic tree cover would open views that have become blocked over time, which would have a positive effect on visual resources in the Presidio.

The areas adjacent to the Presidio are fully developed urban areas that are not expected to substantially change in visual character for the foreseeable future. Changes that would occur within the Presidio as a result of the alternatives would be incremental and localized. Significant views within the Presidio would be protected or enhanced as would views of the Presidio from adjacent areas.

AIR QUALITY

The San Francisco Bay Area Air Basin is the geographic area considered in evaluating cumulative air quality impacts. This regional air basin does not attain the state and federal standards for ozone. All emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x) in the region contribute to cumulative regional increases in ozone levels. Regional air quality planning efforts aim to reduce ozone levels while allowing growth to occur. Any project that would not be consistent with regional clean air planning efforts

is also considered to cause a significant cumulative impact because it would make attainment of air quality goals more difficult. Any project that would cause significant increases in cumulative levels of carbon monoxide (CO) in areas of localized CO violations would also be inconsistent with plans for maintenance of CO levels.

A significant cumulative impact would occur if an alternative would be inconsistent with the most recent Clean Air Plan (CAP). As discussed in the Consistency with Regional Clean Air Plans section, housing and employment growth related to each alternative could outpace the growth assumed in the current GMPA and the assumptions of the 2000 CAP, so that Presidio-related emissions could exceed levels assumed in the CAP. Other regional growth, land use trends, and transportation projects that are outside the control of the Trust could also exceed the levels assumed in the CAP and must be considered in conjunction with PTMP-related growth when assessing cumulative effects. These potential increases in air emissions would be a significant and unavoidable cumulative impact. However, no significant cumulative impacts on localized CO concentrations would occur.

NOISE

Noise is a localized issue limited to the geographic area adjacent to or in the vicinity of a project or activity. Noise can be short term, as during construction, or on going, as with noise from a highway. Short-term cumulative impacts could be related to concurrent Presidio construction projects and the reconstruction of Doyle Drive. Over the long term, new development within the Presidio would coincide with anticipated region-wide growth in traffic noise, especially from traffic on U.S. Highways 101 and 1. Increased traffic noise from cumulative growth on roadways within the Presidio is analyzed in the Environmental Consequences, Noise, chapter of this EIS above because traffic data for buildout conditions account for cumulative traffic increases. Noise from other sources and activities within the Presidio would add to this effect. These cumulative effects were analyzed in the GMPA EIS and were found to be minor. Under any alternative, these effects would occur, but would not substantially exceed noise levels identified in the GMPA EIS, and the impact would remain less than significant.

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4.8.3 THE COMMUNITY

LAND USE

The effects of the alternatives when added to the effects of other past, present, and forthcoming projects, would be positive. In general, the projects—including the VMP, Mountain Lake enhancements, Crissy Field (Area A) improvements, the Presidio Trails and Bikeways Master Plan, and the Environmental Remediation Program—would increase open space, enhance park values, and improve the Presidio's natural and recreational qualities. When considered in combination with increases in open space included in all EIS alternatives, the beneficial impacts would be even greater. Ultimately, open space would constitute about 75 percent of the Presidio total acreage (Area A and B). The projects would restore additional native plant habitat, reestablish portions of the historic forest, and enhance the historic setting. Most of the Area B open space improvements would take place in the southern part of the park, primarily through concentrating developed areas in the north and northeast, and removing residential areas in the south to expand open space. The cumulative effect of this change in land use patterns would be to provide a more park-like setting in many parts of the Presidio.

SOCIOECONOMIC ISSUES/HOUSING SUPPLY

The assessment of housing demand and other socioeconomic topics presented in Section 4.4 inherently address potential impacts of the EIS alternatives when combined with demand for housing, schools, and public services from other sources. For example, the number of households (net of those residing in the Presidio) generated under each alternative is expressed as a percentage of the new households in the Housing Impact Area (HIA) between 2000 and 2020 (the HIA is defined in Table 16). The new households in the HIA, projected by ABAG, represent the cumulative household demand resulting from other local developments. The analysis for each alternative shows that when compared to the No Action Alternative (GMPA 2000), the impact of new housing demand on the regional housing supply is less than 1 percent, which is not considered significant.

SCHOOLS

Residential development throughout the City of San Francisco is likely to generate additional public school students over the next twenty years. This development, in conjunction with each of the alternatives, will have a cumulative impact on school capacity. However, it is not possible to develop reasonable projections of cumulative impacts on total school capacity due to a multitude of variables including changes in state-mandated classroom size, the addition of temporary and permanent facilities, and changes in the percentage of San Francisco children in the public school system. ABAG projections indicate that San Francisco household size between 2000 and 2020 will decrease from 2.46 to 2.37 persons per household. The City's total population is projected to grow to 818,800 persons through 2010 and then decrease to 808,000 persons by 2020. Both trends suggest that public school enrollment may decrease slightly over the next twenty years, creating additional capacity for students. With the exception of high schools, City schools that serve the Presidio appear to have sufficient capacity to accommodate the anticipated school population generated by each alternative. Galileo High School has some limited capacity, which could be exceeded by new Presidio-resident students. However, the increase in students is a very minor fraction of the total district enrollment and, in the absence of long-term student population projections, cannot be considered significant.

VISITOR EXPERIENCE

Expanded facilities and programming under the PTMP would complement the visitor experience offered by the NPS's Presidio operations, the rest of the GGNRA, and other regional visitor resources. Development by NPS at the Presidio (Area A), including the recently completed Crissy Field Plan have had a beneficial effect on the educational and interpretative (as well as recreational) opportunities for visitors. Other NPS projects and programs include Fort Point National Historic Landmark, National Maritime Museum, the proposed Fort Baker Retreat and Conference Center, Bay Area Discovery Museum, and various existing programs and visitor facilities within the Marin Headlands and throughout the GGNRA. Other regional visitor resources contribute to both the regional and national efforts to

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expand interpretive and educational opportunities for the public. With implementation of any of the EIS alternatives, additional educational resources would be available to Bay Area residents and visitors. No adverse cumulative impacts on visitor facilities are anticipated as a result. As discussed in Section 4.4.4, the Trust would implement measures to ensure that future visitation does not adversely impact the Presidio's resources or the public's enjoyment of the park.

RECREATION

The PTMP would enhance passive recreational and educational experiences and would increase and diversify recreational opportunities through the creation of new open space areas and through the continued restoration of remnant natural areas and historic forest stands. Other projects (in addition to the PTMP) at the Presidio, the rest of the GGNRA, and other regional recreation resources would contribute to recreational opportunities in the Bay Area. For example, improvements at Mountain Lake would include construction of a 350-foot unpaved trail with three overlooks along the east shore of the lake and an overlook with benches and interpretive exhibits on the lake's south shore. A \$34 million rehabilitation of Crissy Field in Area A provides 100 acres of restored parkland including a tidal marsh, promenade, boardsailing area, picnic areas, and bike path. The National Park Service, Presidio Trust and Golden Gate National Parks Association have also initiated an effort to study the expansion of the Crissy Marsh. The Presidio Trails and Bikeways Master Plan (currently under preparation) would provide a comprehensive network of trail and road-based natural/cultural areas, regional trails, public transportation stops, and other recreational/open space features of the Presidio. All of these projects, in combination with the PTMP alternatives, would contribute substantially to enhancing recreation opportunities within the region. Projects that could displace existing recreation uses, such as the Tennessee Hollow project, would be subject to additional planning and analysis, and their potential effects would tend to be balanced by the commitment to maintain and expand recreational opportunities under all EIS alternatives (see planning principle 10 in the Final Plan).

PUBLIC SAFETY

Law Enforcement

Law enforcement is generally provided on a local level with cumulative development having little impact beyond a local jurisdiction. The United States Park Police (USPP) serves the Presidio with a dedicated operation with its own budget and personnel. Other development at the Presidio, including the LDAC project, in combination with any of the proposed alternatives, would be adequately served if mitigation identified in this EIS (requiring a review and expansion of services as needed) is implemented. Cumulative regional development will have little or no impact on USPP Presidio operations at the Presidio, because the USPP would not operate outside of its jurisdiction.

Fire Protection and Emergency Services

Fire protection and emergency response is generally provided on a local level with cumulative development having little impact beyond a local jurisdiction. The Presidio Fire Department serves the Presidio with Fire Station 1, which also serves Presidio Area A. Fire Station 2, in the Marin portion of the GGNRA, provides backup for Fire Station 1 with additional backup being provided by the San Francisco Fire Department. Cumulative development elsewhere in the Presidio, including the LDAC and Area A, would not increase the need for expanded services beyond those identified in the impact discussion. Other cumulative regional development would have little impact on Fire Station 1 of the Presidio Fire Department. The development of East Fort Baker would necessitate the relocation and expansion of Fire Station 2 from the Marin headlands to East Fort Baker, but this relocation would not have a significant impact on the ability of Station 2 to provide backup services to Area B.

4.8.4 TRANSPORTATION AND CIRCULATION

ROADWAY NETWORK AND TRAFFIC

The future (2020) cumulative transportation effects of PTMP alternatives were determined using the San Francisco County Transportation Authority

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(SFCTA) travel demand forecasting model plus a detailed travel demand evaluation of the Area B elements to reflect full buildout conditions, for typical daily, a.m. and p.m. peak commute hour conditions. Under the year 2020 cumulative conditions, the transportation network away from the Presidio was assumed to be that currently contained in the SFCTA model, which reflects the projects currently included in the San Francisco Bay Area Regional Transportation Plan, prepared by the Metropolitan Transportation Commission. As discussed in the methodology section, the existing transportation network in the Presidio was adjusted to reflect assumptions about changes in the local highway network, including modifications to the 14th and 15th street gates, realignment of Halleck Street to connect with Lincoln Boulevard, and the provision of a grade-separated connection to Doyle Drive, in the vicinity of the Main Post and Letterman Planning Districts.

The impact analysis presented in the Transportation and Circulation section identifies the combined effects of PTMP alternatives along with projected growth in traffic volumes in the area, and thus provides a cumulative analysis of future year 2020 transportation conditions. As discussed in the Transportation and Circulation section, all of the PTMP alternatives would adversely affect the operation of local intersections. Mitigation measures either adapted from the GMPA EIS or identified as new mitigation in this EIS, would improve intersection operations to acceptable levels under cumulative conditions, except for the three intersections of Lincoln Boulevard/Bowley Avenue/Presidio Drive (a.m. and p.m. peak hours), Park Presidio Boulevard/Lake Street (p.m. peak hour) and Park Presidio Boulevard/California Street (p.m. peak hour), which would operate at an unacceptable level of service due to overall regional traffic growth.

The impact analysis presented the Environmental Consequences section of this EIS identifies the combined effect of PTMP along with projected growth in traffic volumes in the area, and thus provides a cumulative analysis of future year 2020 transportation conditions.

The potential for implementation activities under all EIS alternatives to coincide with construction or implementation of other large projects increases the likelihood that residents, visitors, and employees will

experience delays and other inconveniences associated with construction activities. The contribution of EIS alternatives to these cumulative effects would be minimized through preparation and implementation of construction traffic management plans for individual projects, as specified in Mitigation Measure TR-26. In general, construction activities undertaken as a result of all EIS alternatives would be geographically dispersed, and would occur intermittently. Other projects considered in the cumulative context, such as the Golden Gate Bridge retrofit, the LDAC project, and Doyle Drive reconstruction, would include more focussed construction impacts requiring additional (project-specific) mitigation.

PARKING

All of the PTMP alternatives would provide sufficient parking to accommodate the expected cumulative weekday demand within Area B of the Presidio. The number of parking spaces proposed would exceed the estimated demand by 5 percent under all of the alternatives, except for the Minimum Management Alternative where the supply would exceed demand by eight percent.

Some special events could generate additional cumulative demand for parking beyond that of a typical weekday. Thus, special events would be scheduled and coordinated based on parking availability and events would be regulated to ensure that supply meets the cumulative demand. Cumulative or spill-over effects crossing the Area A/B jurisdictional boundary would be addressed through mitigation measures included in Section 4.5.

BICYCLE AND PEDESTRIAN FACILITIES

Implementation of the Presidio alternatives would result in a substantial increase (about 200 percent) in pedestrian and bicycle activity within the Presidio and on streets adjacent to the key gates. Under all alternatives, approximately 14 to 18 percent of all trips generated by the land uses are anticipated to occur by walking and parking as the primary mode. The cumulative pedestrian and bicycle activity would be generally accommodated within the existing pedestrian and bicycle network, plus

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planned improvements to be outlined in the Bikeways and Trails Master Plan.

PUBLIC TRANSPORTATION

The alternatives would double or triple the current number of transit trips on Muni and GGT. About 75 or 80 percent of the additional transit trips would be on Muni and about eight percent on GGT. The increased of ridership on Muni lines would be distributed among the thirteen bus lines serving the Presidio and its vicinity, while the increase in ridership on GGT would be distributed among the 26 routes that serve the Presidio. In general, the Muni lines have available capacity in the vicinity of the Presidio and the maximum load points to accommodate the cumulative transit demand. GGT bus lines also generally have available capacity with the exception of five GGT routes (2, 4, 26, 72 and 74) that currently operate at a 90 percent or higher level of utilization. A substantial passenger increase on these lines would result in a cumulative impact unless GGT service on these lines is increased in the future to match the expected cumulative demand.

4.8.5 UTILITIES

WATER SUPPLY AND DEMAND

Cumulative impacts take into account the combined demand of the Presidio and other demands within the SFPUC service area. As seen in Table 51, the projected demand varies significantly throughout the year (0.59 mgd – 2.08 mgd). Available on-site potable supplies from Lobos Creek vary by water year between approximately 0.7-1.6 mgd. For all alternatives, the Trust would maximize the use of on-site water supplies; however, there would still be a need to purchase supplemental water from the City. This need would occur primarily during the summer months when on-site supplies (Lobos Creek and recycled water) are not sufficient to meet peak demands. Because this demand will vary from year to year depending upon annual precipitation, it is difficult to precisely predict the amount of water that would be needed. The SFPUC's *Final Urban Water Management Plan for the City and County of San Francisco* identified the Presidio as a retail customer and assumed a constant demand of 1.0 mgd for the Presidio. It is safe to assume that under normal operating conditions, none of the PTMP

alternatives would require this level of service. The Presidio demand identified in the SFPUC's Plan represent less than a quarter of a percent of the projected total demand for the SFPUC service area (407 mgd). The Trust is committed to minimize the need for off-site water purchases under all alternatives through the implementation of aggressive water conservation and use of recycled water. Cumulatively, the PTMP would have a negligible effect on water supply within the region.

WASTEWATER TREATMENT AND DISPOSAL

Cumulative impacts take into account the combined effect of the Presidio and other local development on wastewater discharge to the City's sewage treatment system. Wastewater flows from the Presidio are conveyed to the City's system and treated at one of two plant sites: the Oceanside Water Pollution Control Plant or the Southeast Water Pollution Control Plant (SEWPCP). The Trust and City monitor these flows, and the Trust reimburses the City for the cost of treatment and disposal. The SFPUC reports that, under dry weather conditions, the City's sanitary sewer system has sufficient capacity to accommodate projected growth in San Francisco in the immediate future. However, the system's ultimate capacity under wet weather conditions has yet to be determined (personal communication, Carlin). Currently, the SEWPCP, which receives the greatest share of the City's wastewater flow, is operating at capacity under wet weather conditions (personal communication, Franz). The San Francisco 2001 *Final Urban Water Management Plan* projects an increase in water usage from 83.9 mgd to 85.8 mgd between 2000 and 2020, indicating an increase in wastewater flows over the same period. The SFPUC is exploring the possibility of increasing treatment capacity at the North Point Water Pollution Control Plant in response to these projections. Increased capacity at the North Point Plant would also limit flow to SWPCP and reduce the number of combined sewer overflows (CSOs) under wet weather conditions.

Under all of the PTMP alternatives, wastewater flows to the City's combined sewer system would increase above current levels but would always remain substantially lower than historic levels which were measured at 475 million gallons in 1990. Current flows are approximately 120 million gallons annually. Under the various PTMP alternatives, annual 2020 flows

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would range from 183 million gallons under the Minimum Management alternative to 266 million gallons under the Cultural Destination alternative. To put these flow in context with the City's system, both the current and maximum future flows represent less than one half of one percent of the capacity of the either of the City's plants where these flows are treated. Implementation of the mitigation measures identified in this EIS including water conservation practices (i.e., use of water efficient toilets and faucets) and system upgrades would further reduce flows. Implementation of the proposed water recycling project would have a direct reduction in flows that would otherwise go to the SEWPCP for treatment and disposal. Implementation of the water recycling project would divert, treat and reuse on-site up to 85 million gallons of wastewater that would otherwise go to the SEWPCP. Cumulatively, the PTMP alternatives are minor contributors to the City's combined sewer system and the Trust would continue to pursue actions to minimize Presidio flows as described above.

STORM DRAINAGE

As the Presidio storm drainage system is largely exclusive to the Presidio, development outside the Presidio is not expected to generate additional drainage to the system. Conversely, the Presidio is not expected to add to storm water runoff into the City's system, since it is a separate system and drains to the bay or ocean. Therefore, no cumulative impacts on San Francisco's storm water system are anticipated. Implementation of the Presidio VMP, Crissy Field project (existing and possible expansion), Presidio Trails and Bikeways Master Plan, and the Mountain Lake Enhancement Plan, to the extent that they increase vegetation and other porous surfaces and reduce non-porous surfaces, will reduce storm water runoff within the Presidio storm drainage system. Implementation of the Presidio Stormwater Pollution Prevention Plan (SPPP), currently under preparation, will also have a cumulatively beneficial effect on storm drainage within the park by ensuring the implementation of Best Management Practices (BMPs) to minimize runoff and improve water quality. The SPPP will establish a detailed monitoring program which will be implemented to track the effectiveness of the BMPs and monitor the quality of storm water runoff at the park over the long-term.

SOLID WASTE

Cumulative impacts take into account the combined effect of the Presidio development and other local development in the nine-county Bay Area on regional solid waste generation. The analysis presented in the Environmental Consequences section of this document provides a cumulative impact assessment, by calculating the percentage of the regional waste stream produced by development under the alternatives. Construction activities under the alternatives would either reduce the regional solid waste stream, or generate an additional .01 to .03 percent of the regional solid waste, as compared to the No Action Alternative (GMPA 2000). The No Action Alternative (GMPA 2000) would generate .08 percent of the regional waste stream. Mitigation identified in this EIS would further limit the production of solid waste.

ENERGY CONSUMPTION AND DISTRIBUTION

Electrical Supply

California is currently undergoing a statewide electrical crisis, with demand in excess of supply and costs increasing significantly as a result. The State of California has responded to this problem by negotiating long-term contracts for electricity, facilitating construction of new power plants, encouraging conservation measures, and investigating power generators' activities. As a major population and industrial center, the Bay Area has been particularly impacted by the power shortage. ABAG projects the regional population to grow by 16 percent and the number of jobs to increase by 27 percent over the next twenty years, suggesting an increase in regional electrical consumption. Development at the Presidio under all the alternatives would contribute to this regional electrical demand. To limit the Presidio's impact on regional demand, mitigation identified in this EIS would be implemented. Measures would also be taken by the Trust would also be in compliance with Executive Order 13123, mandating that energy use at the Presidio be reduced by 35 percent below 1985 levels by 2010. These steps would further reduce the Presidio's impact on regional electrical demand and consumption.

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Natural Gas Supply

As stated above, the regional population is projected to increase by 16 percent, and regional employment by 27 percent. This growth will lead to an increase in regional natural gas consumption. Development at the Presidio under all alternatives would represent a portion of this regional demand. To limit the Presidio's impact on regional demand, mitigation identified in this EIS would be implemented. In addition, measures taken by the Trust to reach compliance with Executive Order 13123 would reduce the Presidio's contribution to regional natural gas demand.

Energy Conservation

The cumulative analysis under the Energy Consumption and Distribution and Natural Gas Supply states that development under any of the Presidio alternatives would represent an increase in regional energy demand. However, compliance with Executive Order 13123 assures that the Presidio would reduce its energy consumption under each of its alternatives, thus limiting its impact on regional energy demand and furthering the goals of energy conservation.

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5.1 HISTORY OF PUBLIC INVOLVEMENT

The Presidio considers public involvement and comment to be critical in shaping the updated vision for the Presidio's future. The following section describes the public involvement program for the Presidio Trust Management Plan (PTMP) and EIS, as well as background on the applicability of various laws, executive orders and other regulations. Information on the persons and agencies consulted in the preparation of the EIS and a list of EIS authors is also provided.

5.1.1 PUBLIC REVIEW OF DRAFT EIS AND DRAFT PLAN

Inviting Public Comment

The Trust released the Draft Plan and Draft EIS for public review and comment on July 25, 2001. On that date, the Trust held a widely noticed public meeting to brief the public on the contents of the Draft Plan and Draft EIS, and to encourage participation in the review process. Copies of the documents were distributed at the July 25 meeting, as well as information on the upcoming public hearings, the closure date for the comment period, and other pertinent information. The Environmental Protection Agency (EPA) published a notice of availability for the Draft EIS in the Federal Register on July 27, 2001 (66 FR 39161). The Trust also published a notice of availability in the Federal Register on July 26, 2001 (66 FR 39058-59) and announced through other means the availability of the Draft EIS, where and how it could be reviewed, and the date and location of public hearings to comment on the document. An announcement was also provided in the Presidio Post (the Trust's monthly publication which has a mailing list of approximately 9,000 persons and organizations) and on the Trust's web site (www.presidiotrust.gov).

The Presidio Trust initially identified a 60-day comment period for the Draft EIS ending September 25, 2001. In response to several requests from commenting organizations and other parties, the Trust elected to extend this period by 30 days to October 25, 2001 (66 FR 46296). The Trust provided the

longer 90-day review period to further enhance the opportunities for public and agency participation in the NEPA process.

More than 700 Draft EISs were distributed to interested agencies, organizations and individuals. The Draft EIS was also made available for review at the Presidio Trust library, park headquarters, local libraries, the William Penn Mott Visitor Center, and on the Presidio Trust's website (www.presidiotrust.gov).

Public Hearings

Members of the public interested in making oral comments for the record were provided that opportunity at three public hearings: a Golden Gate National Recreation Area Citizens' Advisory Commission meeting held on behalf of the Presidio Trust on August 28, 2001; a Presidio Trust Board of Directors meeting on September 17, 2001; and a Presidio Trust public hearing on October 16, 2001 (official transcripts from the three formal meetings are available for review in the Presidio Trust library). In addition, the Presidio Trust held a number of informal meetings with various government agencies, organized interest groups, and neighbors to provide information, answer questions, and encourage written comments.

Public Comment on the Draft EIS and Draft Plan

During the extended 90-day public review and comment period, the Trust received a total of 264 comment letters, 135 e-mails, and 2,657 electronic form letters on the Draft EIS and Draft Plan. In addition, oral comments were provided at the three public hearings held during the review period. Comments ranged from individual recommendations, opinions or preferences for the various alternatives to criticism of the Draft Plan and Draft EIS. All of the comments were carefully reviewed by the Trust, and Volume II of the Final EIS (Response to Comments)¹ is dedicated to addressing these comments. In responding to public comments, the Trust made several refinements to the Plan and EIS, and an overview of the primary changes is

¹ Refer to the cover page of this document for information on how to obtain a copy of the Responses to Comments document (Volume II of Final EIS).

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NPS reviewed and provided comments on the Trust's written scoping materials, including the Conceptual Alternatives Workbook summarizing proposed alternatives for study. After the close of scoping, the Trust held several focused sessions to review how the Trust was addressing NPS' scoping comments and comments on the EIS alternatives and on preliminary draft sections of the Plan. Trust staff with specific technical expertise met with counterpart staff within NPS to ensure technical and factual information was reviewed and adjusted. The Trust also hosted several focused sessions with NPS on the following topics: open space/natural resources, interpretation/programs, transportation and parking management, cultural resources, and sustainability. Each of the sessions included informal presentations, review of existing policies and proposed principles, and discussions on the subjects. Further meetings with NPS focused on receiving comments on the internal administrative review draft of the Draft Plan and the Draft EIS.

Scoping Report

Once the 6-month scoping period closed, the Trust made available for public review in the Trust Library a complete set of all written scoping comments. Also available in the Library and on the Trust's web-site were copies of workshop transcripts that recorded oral comments received during the various scoping workshops. The Trust prepared a post-scoping document that summarizes scoping comments and input. The report describes and summarizes the issues identified in 600 written and oral responses.

The following describes the key issues raised during the scoping period, and considered by the Trust to be principal areas for study and analysis in the Draft EIS. This section explains key differences between the scoping alternatives and the alternatives analyzed in the Draft EIS, and describes how these issues were addressed in the Draft Plan and the Draft EIS.

- **Compatibility with and Relationship of the Plan to the GMPA**

A number of scoping commentors did not want to see any change in the GMPA vision and questioned the need for and purpose of an updated Plan. Many of these commentors noted concerns that the Trust's planning proposals were a rejection of the GMPA, and commentors sought to retain many specific GMPA elements. Some commentors

requested clarification of the relationship between the GMPA and the Plan. In response, the Purpose and Need discussion in the Draft EIS and Chapter 1 (Introduction) of the Draft Plan set out the underlying need and objectives in proposing that the 1994 GMPA be modified and updated. These sections also described the relationship between the GMPA and the Plan in greater detail than was offered in the Trust's scoping materials.

Since its inception, the Trust has carried out the mandates of the Trust Act by looking to the GMPA as the foundational plan that guides the Trust's planning and decision-making. Consequently, the Draft Plan and alternatives for Area B were not developed from a blank slate. The Draft Plan and alternatives retained elements of the GMPA that had already been carried out or that did not warrant change. They incorporate many of the GMPA's foundations and concepts through the Planning Principles, which will become the specific goals and objectives for managing Area B in the future. At the same time, the Draft Plan and alternatives built in modifications to the GMPA to obtain a measure of flexibility not contemplated in the GMPA, and to better reflect the Trust's differing mandate, policies, and approaches. The Plan, once adopted by the Trust Board of Directors, will become the Plan governing the Trust's future management and implementation in Area B, and the GMPA will continue to govern NPS's management of Area A.

- **Level of Demolition and New Construction**

Various commentors raised concerns during the scoping period about the proposed levels of demolition and new construction within the conceptual alternatives. They expressed concern that high levels of demolition and new construction would impair the NHLD.

The Trust addressed this scoping period concern by modifying the alternatives presented in the Draft EIS and by including policies governing historic resource protection that were applicable to all alternatives. Each of the scoping alternatives reported an additional amount (900,000 sf) of demolition and new replacement construction associated with the 23-acre Letterman Digital Arts Center (LDAC) project. The addition of this square footage to the total allowable demolition and new construction for each scoping alternative created confusion by overstating the actual levels being proposed in the plan

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update. The LDAC project was previously analyzed under a separate EIS (Letterman Complex EIS), and the proposed programmatic planning update for Area B was tiering from not only the GMPA EIS but also the Final Letterman Complex EIS. All elements of the 23-acre LDAC project were included within the baseline conditions of the Draft EIS alternatives, and consequently it was unnecessary to reanalyze the LDAC project as a proposal because its effects were already captured in each alternative's baseline condition. Each of the Draft EIS alternatives were therefore clarified by reducing the allowable totals across all Draft EIS alternatives for future park-wide demolition and new construction by the 900,000 square feet already analyzed under the Final Letterman Complex EIS. After the LDAC project square footage correction was made, the Draft EIS alternatives correctly reported the proposed levels of demolition and new construction, which represented the outer bounds for what could be proposed as part of future implementation of the plan update. Proposed demolition levels in the Draft EIS alternatives were developed assuming largely the demolition of non-historic structures, such as removal of Wherry housing.

The Trust is charged with managing the NHLD under its jurisdiction in a manner consistent with the Trust Act and the NHPA. To address scoping commentors concerns that the status of the NHLD is not impaired during future implementation of the Plan, the Draft Plan and Draft EIS articulated policies to adhere to a number of substantive and procedural safeguards. Planning Principles related to cultural resources were set forth in Chapter 2 of the Draft Plan to guide future plans and projects. In addition, new construction would be subject to the planning guidelines for each planning district set forth in Chapter 5 of the Plan and would have to comply with Section 106 of the NHPA.

- **Historic Resource Protection Concerns**

Closely related to the scoping comments concerning proposed levels of demolition and new construction were various comments requesting that the Trust underscore the importance of protecting historic resources in the NHLD. The Planning Principles governing cultural resource management set forth in Chapter 2 of the Draft Plan, defined policies that applied to all of the alternatives. These policies, together with proposed cultural resource mitigations, the process provided under what was then

the draft Programmatic Agreement for compliance with federal historic preservation laws, and the application of planning district guidelines would ensure that the NHLD would not be impaired and individual resources would be preserved to the maximum extent feasible.

- **Comprehensive Management Program**

Scoping comments sought clarification on how and when the Trust would comply with the Trust Act Section 104(c). The Act requires the Trust to develop a comprehensive program for management of Area B. The management program would consist of evaluating each structure identified for demolition in the GMPA to determine whether rehabilitation and reuse of the structure would be cost-effective, evaluating for possible demolition the buildings in categories 2 through 5 of the 1985 Historic American Buildings Survey (HABS) Report, considering opportunities for new construction within existing areas of development, and addressing administrative management issues.

The Section 104(c) management program is an ongoing endeavor, and will not be addressed by a single document or plan. PTMP is the foundation of the program and establishes the framework within which the more specific evaluations and decisions under Section 104(c) will proceed in the future. PTMP is not and need not be the complete Section 104(c) management program. The program consists of the Trust's administrative management procedures and policies, options for which have been considered in the PTMP planning process. The ongoing evaluations and future decisions related to specific building reuse, rehabilitation, demolition, and new construction that will follow from PTMP's land use and square footage framework, area-wide planning principles, and character-defining features of each planning district will build upon the foundation established by PTMP to round out the program.

- **Open Space**

A number of scoping comments focused on the need for the Trust to better define what was encompassed within the open space designation ("green space") depicted as part of the proposed conceptual plan alternatives presented in the November 15 Conceptual Alternatives Workbook. In response to these scoping comments, the Trust used the

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designations of the Vegetation Management Plan (VMP), developed and prepared by the NPS in cooperation with the Trust, as the framework for future resource management actions within open space areas of the Presidio. Using the categories of the VMP, the alternatives in the Draft EIS provided detailed open space definition, consisting of native plant communities, forest, and landscape vegetation as the basis for the alternatives analysis. The differences among the Draft EIS alternatives with respect to open space were arrayed in Draft EIS Table I and described in the alternatives descriptions. The Draft EIS also analyzed these differences as potential impacts on natural resources, land use, and visitor experience.

- Delete the Minimum Management Alternative

During the scoping period, several commentors suggested that the Minimum Management alternative (formerly referred to in the Conceptual Alternatives Workbook as the “Existing Conditions” alternative) should be screened out as unreasonable because it failed to make a commitment to remove Wherry housing to assure the recovery of the endangered San Francisco *Lessingia germanorum*. The Trust elected to study one alternative (the Minimum Management alternative) that retained Wherry housing indefinitely in order to assess the potential effects of this alternative on the San Francisco *Lessingia*, and to have a base of comparison to other alternatives that propose the removal of Wherry housing. The Trust believed this approach would provide useful biological and financial information with which to compare the different alternatives, and to consider during the decision-making process. Consequently, the Minimum Management alternative was retained for study.

- Habitat and Resource Enhancements

Many scoping comments sought specific habitat enhancement commitments, including the restoration of the Tennessee Hollow riparian corridor and the expansion of the Crissy Field Marsh. With respect to Tennessee Hollow, each of the alternatives (except for Minimum Management) in the Draft EIS made a policy commitment to the restoration and enhancement of the Tennessee Hollow riparian stream corridor and acknowledged that the extent of the restoration would be

subject to future site-specific implementation planning following adoption of a final plan. See Common Features and alternatives descriptions in Chapter 2 the Draft EIS and the Draft Plan Planning Principles related to Natural Resources (Chapter 2).

In the Draft EIS, the Crissy Field Marsh expansion was included as a component of two alternatives (GMPA 2000 and Resource Consolidation) and would be subject to further study and environmental review under the other Draft EIS alternatives. These alternatives did not propose to decide the question about marsh expansion; instead, they did not preclude the possibility, while committing to further study, of the feasibility and efficacy of further marsh expansion.

- Programs

Various scoping comments questioned the Trust’s program delivery proposal and the financial modeling assumptions made with respect to park program funding. In response, the Trust provided more detailed explanation of the different program delivery approaches, and modified the financial assumptions to better evaluate the issue in the Draft EIS.

Some scoping commentors stated a preference to have the Trust exclusively select tenants with a business-mission related to park program themes, and have those tenants deliver and pay for park programs. This issue was discussed in the Draft Plan, Presidio Programs (Chapter 3) and in the Draft EIS. Chapter 3 of the Draft Plan acknowledged that the Trust sought a broader visitor experience, an expanded variety of programs, and greater assurance that the Presidio’s programmatic goals be achieved more consistently than was envisioned in the GMPA. A strong collaborative effort and a set of partnerships involving the Trust, NPS, tenants, philanthropic organizations, cultural institutions, and community volunteers was proposed to meet this need.

To better evaluate the different methods of program delivery, the Trust modified the assumptions of the financial model across the alternatives in the Draft EIS to reflect key differences in program delivery. The Draft Plan alternative was assumed to deliver cultural and educational programs predominantly through Trust-sponsored programs and partnerships, with the possibility that some programs could be delivered by mission-based

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tenants. This approach was intended to ensure a high-quality, consistent and long-tenure programming component despite inevitable fluctuation in tenant mix. The Draft Plan alternative's definition of programs was very broad (see Chapter 3 of the Draft Plan) to address all aspects of a successful visitor experience, encompassing such things as enhanced interpretation programs; museums and institutes (including Fort Scott); exhibitions, events, and cultural programs; community stewardship; sustainability and resource education programs; and Presidio community activities. For financial comparison purposes only, the Draft Plan alternative assumed just under 1 million square feet (about 26 percent of total non-residential square footage) in cultural/educational program use. For financial modeling only, the rental rate for this space was assumed at \$9/sf/year. The financial modeling of the Draft Plan alternative also assumed expenditure of \$10 million per year for this amount of cultural/educational programming.

In contrast, the No Action Alternative (GMPA 2000) was structured to deliver cultural and educational programs through mission-based tenants as was contemplated under the 1994 GMPA. For financial comparison, this alternative assumed about 340,000 square feet in cultural/educational uses and about another 850,000 for reduced rate office space for mission-related tenant uses. For financial modeling only, cultural/ educational expenditures were assumed to be about \$2 million/year under the No Action Alternative (GMPA 2000). By varying the approach in this way among the alternatives, different approaches to programming were evaluated in the Draft EIS. Under the No Action Alternative (GMPA 2000), space would be provided to mission-related tenants who would provide public programs predominantly at the tenant's own expense, while under the Draft Plan alternative, financial resources were assumed to go directly to delivery of park programming.

- **Financial Model**

Various scoping commentors requested that the Trust critically review and revisit certain assumptions of the financial model used to evaluate and compare the financial viability of the Draft EIS alternatives. In response to these scoping comments, the Trust revised a number of financial modeling assumptions from those relied upon when the scoping alternatives (and accompanying preliminary financial analysis) were

presented in November 2000. In general, the changed modeling assumptions lowered the capital costs and shortened the time to completion of the capital program for all the Draft EIS alternatives, and improved the financial performance of the No Action Alternative (GMPA 2000). The following summarizes the specific issues raised during the scoping period, and provides an overview of how the Trust responded and/or an explanation as to why a change in the financial model was not made.

Program Expenditures – The financial comparison of the alternatives varied the projected level of program expenditure (from \$2 million to \$10 million annually) to reflect differences in the method of delivery and level of programming anticipated in different Draft EIS alternatives. (See “Programs” discussion immediately above).

Timing of Wherry Housing Demolition – The timing of the demolition of Wherry housing was adjusted in response to scoping comments. The Trust modified the No Action Alternative (GMPA 2000) to assume retention and leasing of Wherry housing until its demolition at the end of the GMPA planning period (between 2010-2012) rather than early in the GMPA planning period (by 2004). Scoping comments also indicated strong support for delaying the demolition of Wherry housing so that its revenues could be used to fund other operating expenses and capital improvements. Therefore, the Draft Plan Alternative assumed that Wherry housing would be demolished in phases over a 30-year period (one-third by 2013, one-third by 2020, and one-third by 2030) and other alternatives assumed that Wherry housing would be demolished in phases over a 20-year period (one-third by 2013 and the remaining two-thirds by 2020). Because the financial model in the Draft EIS extended over 20 years rather than the full 30 years planned for the phased demolition of Wherry housing removal in the Draft Plan Alternative, the financial analysis treated the Draft Plan and other alternatives, except the No Action Alternative (GMPA 2000) similarly.

Underground Parking Garage – In response to several scoping commentors who were strongly opposed to the assumption of an underground parking garage to replace spaces lost due to the restoration of the Main Post parade ground, the assumed underground parking garage was eliminated from the Draft Plan and the Draft EIS. Consideration of

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options for providing parking within Area B was deferred to future planning.

Parking Fees – A few scoping commentors suggested that the Trust include parking fees among the anticipated revenues from Trust operations. The financial model retained the assumption that Trust-sponsored transit expenses and costs associated with parking supply and management issues would offset any parking revenues. This assumption was made to retain conservatism in the financial assumptions and was considered reasonable because excess revenues received from parking management are expected to be reinvested in additional transportation management and transit programs at the Presidio. An explanation of the rationale supporting this assumption was added to the Financial Model.

Assumptions and Documentation binder detailing the financial modeling assumptions, and Appendix J in the Draft EIS.

Philanthropy – Scoping commentors suggested that the Trust should assume a level of philanthropic funding in the financial modeling of alternatives. Basing financial performance on receipt of donations, when there is no actual commitment of funds, would be fiscally imprudent and inconsistent with the guiding principle of a conservative financial analysis. Although the Trust fully intends, as part of its future implementation efforts to seek and accept philanthropic donations to assist in funding programs, activities and park needs, the financial model was not modified to include a specific dollar assumption for future philanthropic funding.

Trust as Master Developer versus Third-Party Developers – Financial modeling at the time of scoping assumed that the Trust financed all development, including new construction projects. Several scoping commentors noted that the Trust acting as master developer for all projects was unrealistic, and biased the alternatives in favor of higher capital costs and more development. In response, the Trust modified this assumption such that all Draft EIS alternatives assumed third-party financing of all new construction projects. This change substantially lowered the total capital costs, and shortened the time to completion of capital projects and reserve funding for all alternatives.

Operating Costs – Several scoping commentors suggested that the Trust must indicate variations in operating costs among the different alternatives. The estimated operating costs relied upon in the financial model are based upon at least three years of actual operating experience of the Trust. They were not adjusted relative to the differing amount of building space proposed among the six alternatives. This approach was based upon several factors. First, the financial model was created as a planning tool to compare the relative financial performance of different land use scenarios. Its utility lies primarily in its capacity to indicate the revenue-generating potential of different alternatives relative to one another. It was not designed to accurately or precisely predict long-term operating costs or other financial variables over the extended 20-year planning horizon assumed in the Draft EIS. Assuming variable operating expenses for different alternatives would have made it more difficult for public reviewers to compare one alternative to another.

Second, many of the Presidio's operating costs are nondiscretionary and therefore do not vary in direct proportion to changes in the built environment's square footage total. The difference in building space between the largest and smallest alternative studied was about 1 million sf or just over 15 percent. Thus, even if a building is removed, there are other offsetting operating costs, including some additional expenses associated with the management and maintenance of the newly created open or unbuilt space (e.g., landscaping costs, costs of maintaining open space). Third, adjustment of operating costs to reflect actual variability was considered too speculative over a 20-year planning horizon and would have suggested that the model was or could be used as a more sophisticated financial forecasting tool, which it is not. Lastly, the financial model does account for variation in operating expenses over time, but does so in a manner more consistent with the purposes of the model.

Subsidized Space for Mission Related Tenants – At the time of scoping, no financial provision was made to reflect mission-related tenants. In response to scoping commentors seeking tenant subsidies and program delivery through program enhancing mission-based tenants, the financial assumptions for the No Action Alternative (GMPA 2000) were modified to reflect differences in the method of program delivery among the

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alternatives. The No Action Alternative (GMPA 2000) was revised in the Draft EIS to assume that programs would be delivered and paid for predominantly by park tenants, and the provision of these services was reflected in leasing a percentage of the non-residential space to mission-based tenants.

Capital Replacement Reserves and Steady-State Cash Flow – The concept of capital replacement reserves was retained in the financial analysis, but was no longer presented in the spreadsheets as an accrued deficit because of the confusion it created during scoping. Instead, the concept was presented as a target date by which reserve funds would be available for the repair and replacement of all capital improvements under each of the Draft EIS alternatives.

Past financial spreadsheets also reported an estimate of steady-state cash flow, which are excess funds available over and above operating expenses once the capital costs and capital reserves have been fully funded. Given the speculative nature of projections extending beyond the financial modeling horizon, this figure was also eliminated in favor of the estimated date by which reserve funds would be available.

Development of New Scoping Alternative

Among the key comments received during the scoping period were requests that the Trust develop and study a new alternative in the Draft EIS. Scoping comment letters asked the Trust to consider a “financially viable GMPA alternative,” i.e., a new alternative patterned on the GMPA, but modified in only those ways necessary to make the alternative financially viable.

To better understand and clarify the request, the Trust met with the requesting groups to discuss the issues of importance, and to clarify the characteristics of the requested alternative. In response, the Trust both modified the “GMPA alternative” and developed an alternative with lower costs and less development than was proposed by the Trust as its preferred plan (i.e., the Draft Plan Alternative).

Changes to the No Action Alternative (GMPA 2000) in response to scoping comments converted this alternative into the one requested by commentors. Specifically, by modifying assumptions regarding the timing of demolition of

Wherry housing and changes in circumstances since the GMPA was adopted, the No Action Alternative (GMPA 2000) was made to “work” from a financial perspective in that it would achieve self-sufficiency by 2013. It was patterned on the GMPA, but modified in only those ways to make the alternative financially viable. The alternative was carried forward in the Draft EIS and provides a viable option for decision-makers.

The Trust had also developed an alternative with minimal to no new construction (except the Letterman 23-acre project), measures to enhance and increase open space, low capital costs, and programs provided and paid for primarily by mission-related tenants, as was envisioned in the GMPA. This alternative was ultimately eliminated from consideration as being duplicative in some aspects with other alternatives and not as responsive to scoping commentors’ requests as the modified No Action Alternative (GMPA 2000) described above.

In addition to addressing scoping commentors’ request for financially viable GMPA alternative, a new alternative, based on scoping comments and pre-publication consultation with commentors, was developed and included in the Draft EIS as described below. Several months prior to the release of the Draft Plan and Draft EIS, the Trust began a series of pre-publication consultation meetings to preview its proposed Draft Plan to key stakeholder groups and individuals. At the time of these meetings, the Trust was actively considering the Cultural Destination Alternative as its Draft Plan Alternative. The initial Draft Plan Alternative maximized total square footage, allowed for the highest level of demolition and new construction of all alternatives, and increased housing stock above currently existing levels. During consultation meetings, commenting groups urged the Trust to consider a smaller Draft Plan Alternative emphasizing the use of existing and reconfigured housing units and less new development.

In response, the Trust chose to present a new alternative, which the Trust believed to be responsive to the scoping input, as the Draft Plan Alternative in the Draft EIS. The Draft Plan Alternative was patterned more closely upon the land use elements of the GMPA, and incorporated the essential land use components requested by the scoping comment letters. It retained the land use pattern of the GMPA by removing Wherry housing (although over a longer period of time as requested by the commentors) and retained a majority of East and West Washington housing for rehabilitation and reuse. It also

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retained the Public Health Service Hospital Complex for potential residential campus and educational uses. It increased the size and quality of the Presidio's open space and ensured the recovery of the endangered *Lessingia* through the removal of Wherry housing, but phased the demolition over an economically practicable period so that revenues could be generated in the interim to pay for other park improvements and upgrades. The Draft Plan Alternative allowed for a limited amount of new infill construction at appropriate locations. The alternative placed more emphasis on the rehabilitation and reuse of existing buildings, and on achieving a favorable jobs/housing balance through the rehabilitation, conversion and reconfiguration of existing residential units. The Draft Plan Alternative also committed to resource enhancements including the restoration and expansion of a viable riparian corridor in Tennessee Hollow and a commitment to study the feasibility of further expansion of the Crissy Field Marsh. All of these elements were among the attributes of the new alternative that scoping commentors requested the Trust to develop and study.

To the extent that elements of the Trust's Draft Plan Alternative were not fully consistent with scoping commentors' preferences, these elements were being studied as part of the No Action Alternative (GMPA 2000) or other Draft EIS alternatives.

5.2 COMPLIANCE WITH RELEVANT ENVIRONMENTAL LAWS AND EXECUTIVE ORDERS

Documentation of Trust compliance with federal environmental review laws and regulations is incorporated into the text of this Final EIS. Compliance with key executive orders and federal laws is summarized here.

5.2.1 EXECUTIVE ORDERS

Executive Order 12898 (Environmental Justice)

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs federal agencies to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

As shown in Table 61, based on the 2000 Claritas, Inc. data, the distribution of population within the City of San Francisco is as follows: 36 percent White, 36 percent Asian, 17 percent Hispanic, 10 percent Black and less than 1 percent Other. Claritas, Inc. reports that the median household income in San Francisco was \$53,630 in 2000.

The population distribution within the census tracts that surround the Presidio ranges from nearly 84 percent white to just under 37 percent white. Median household incomes in these tracts range from a high of over \$140,000 to a low of \$52,000. While a number of tracts have significant minority populations, these high-minority tracts also have household incomes above the city median. Given this information, the neighborhoods that surround the Presidio cannot be characterized as predominantly low-income or minority.

None of the proposed alternatives would create any adverse impacts on minority or low-income communities. Rather, the proposed alternatives would expand recreational and educational opportunities for the general population, including adjacent neighborhoods.

Executive Order 11988 (Floodplain Management)

Executive Order 11988 directs federal agencies to enhance floodplain values, to avoid development in floodplains, whenever there is a practicable alternative, and to avoid to the extent possible adverse impacts associated with occupancy or modification of floodplains.

None of the alternatives would support or allow incompatible development within a regulated floodplain. Should it be determined that a specific development project within Crissy Field/Area B would result in an unacceptable risk of flood loss and human safety based on the best information available during subsequent environmental review, the Trust would consider practicable alternatives or not construct the new structures and facilities within this area. In such cases, design would be governed by consideration of probabilistic estimates of risk of damage, and design and siting evaluations would consider the extent of this hazard to identify and implement appropriate flood protection measures.

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Table 61: Race and Income In Census Tracts Surrounding the Presidio

Tract	Median HH Income	White	Black	American Indian	Asian	Other	Hispanic
127	\$52,335	82.0%	0.4%	0.3%	12.3%	0.0%	5.0%
128	\$83,480	82.3%	1.1%	0.1%	12.6%	0.1%	3.7%
132	\$108,941	83.6%	0.7%	0.1%	11.4%	0.2%	4.0%
133	\$96,726	77.7%	2.7%	0.2%	13.6%	0.2%	5.8%
134	\$76,452	77.5%	5.6%	0.2%	10.4%	0.1%	6.2%
401	\$64,234	41.6%	2.1%	0.2%	50.0%	0.1%	6.1%
402	\$67,184	42.2%	1.2%	0.2%	52.7%	0.2%	3.5%
426	\$61,797	39.3%	1.4%	0.1%	53.0%	0.1%	6.0%
427	\$54,271	36.6%	1.9%	0.3%	54.3%	0.2%	6.7%
428	\$144,388	70.4%	0.5%	0.1%	24.6%	0.2%	4.2%
San Francisco	\$53,630	36.3%	9.9%	0.3%	36.1%	0.2%	17.2%

Source: Claritas, Inc; Bay Area Economics, 2001.

Executive Order 11990 (Protection Of Wetlands)

Executive Order 11990 directs federal agencies to enhance wetlands values, to avoid development in wetlands, whenever there is a practicable alternative, and to avoid to the extent possible adverse impacts associated with occupancy or modification of wetlands. The Clean Water Act regulatory process requires compliance with Federal “no net loss of wetlands” policies, and includes a public and agency review process and a Clean Water Act Section 404 (b)(1) alternatives analysis that would in practice be likely to require avoidance of impacts on aquatic habitats or compensation for losses in extent and values.

The Presidio contains a variety of hydrologic resources, including wetlands, streams, groundwater infiltration areas, and associated freshwater marsh, seep, and riparian vegetation. The PTMP alternatives would, to the extent possible, restore natural habitat, including wetlands and stream corridors, which would increase the amount and quality of water resources.

Executive Order 11593 (Historic Properties)

Executive Order 11593 and Section 110 of the National Historic Preservation Act of 1996 (NHPA) provide direction for inventorying and evaluation of historic properties, and for initiating measures and procedures to provide for the maintenance, through preservation, rehabilitation, or restoration, of federally owned and registered sites at professional standards prescribed by the Secretary of the Interior

The Presidio has been systematically surveyed for historic resources as part of a 1993 revision of the nomination form for NHL status. As a result, buildings have been added to the list of contributing structures. As part of future project proposals and planning efforts, contributing buildings and structures would be proposed for preservation, rehabilitation, and re-use in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* and *Standards for the Rehabilitation of Historic Properties*. Demolition of contributing buildings could have an adverse effect on the NHL. The extent of demolition is not known at this time. However, when buildings are proposed for demolition, full consultation would be undertaken pursuant to

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Section 106 of the NHPA and proposals would be considered in accordance with the provisions of Section 104(c) of the Trust Act.

Executive Order 13123 (Efficient Energy Management)

Development activities at the Presidio must adhere to Executive Order 13123, which mandates an energy use reduction of 35 percent below 1985 levels by 2010. Total energy usage under the Draft Plan alternative is projected to reach 444,158 MMBTU, or 79,314 BTU per square sf. This energy consumption represents a 39 percent reduction from 1990 levels, consistent with Executive Order 13123. Under the PTMP, energy consumption would be further reduced with implementation of conservation measures.

Executive Order 13101 (Waste Reduction)

Federal Waste Reduction Policy is articulated in Executive Order 13101. Under this policy, federal agencies are guided to incorporate waste reduction into daily operations, to work to increase markets for recovered materials, and to prevent pollution. As of FY2000, the Presidio diverted approximately 25 percent of materials from the waste stream annually as a result of waste reduction efforts. The Trust has a goal of diverting 50 percent of the waste stream.

The practices that are being implemented by the Trust to meet waste reduction goals include recycling, salvage programs, and composting. The Trust is building infrastructure and programs to maximize the capability to handle materials on-site in a closed-loop system. Whenever possible, materials are reused or recycled on-site, minimizing disposal, handling, and transport. Asphalt and concrete are recycled from roadwork, and concrete from building deconstruction will be recycled and reused on site.

The Trust is working closely with tenants to provide waste reduction education. The San Francisco Conservation Corps (SFCC) operates a community recycling center in the Presidio and conducts school education programs, youth job training, and waste reduction outreach. The Presidio composting program collaborates with SFCC and conducts additional education programs for local schools, summer camps, and the general public.

Executive Order 13112 (Invasive Species)

Executive Order 13112 recognizes the ecological impacts of invasive species, discusses control measures to be taken to prevent the introduction of invasive species, and outlines the duties of each federal agency whose actions could affect the status of invasive species. It essentially directs federal agencies to prevent the introduction of potentially invasive exotic species, and to control invasive exotics on lands for which they are responsible. The rapid spread of invasive exotic plant species is one of the most critical threats to the viability of the Presidio's native flora.

Mitigation measures identified in this EIS would protect native plant communities from new development, and also call for preparation and implementation of site-specific native revegetation plans. To minimize impacts related to infrastructure development and building rehabilitation, areas of temporary disturbance would be revegetated as quickly as possible with appropriate locally native plant species and non-native species be controlled. These measures would also minimize the impact of invasion by non-native species.

Executive Order 12873 (Federal Acquisition, Recycling, and Waste Prevention)

The Trust complies with the Green Building Guidelines and Executive Order 12873 (Federal Acquisition, Recycling, and Waste Prevention) by incorporating a comprehensive, integrated, and cost-effective approach to waste reduction. See "Solid Waste Disposal Act," below.

Executive Order 13007 (Indian Sacred Sites)

Executive Order 13007 requires federal agencies, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, agencies shall maintain the confidentiality of sacred sites. No sacred sites were identified in the GMPA and neither the Trust nor the NPS has been advised of any new information about sacred sites since the publication of the GMPA.

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Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

Executive Order 13175 requires federal agencies to consult with federally recognized tribes. Although the Ohlone are the most likely descendants of the former indigenous population they are not federally recognized at this time.

5.2.2 FEDERAL LAWS

Americans with Disabilities Act of 1990

Federal guidelines published in accordance with the Americans With Disabilities Act (ADA) define specific requirements for disabled access to parking facilities, pathways, and buildings. The accessibility requirements apply to private entities that provide public accommodations (Title III of ADA) and to government facilities (Title II of ADA). The Trust requires full compliance with the ADA.

Clean Air Act

Section 118 of the Clean Air Act requires that federal facilities comply with existing federal, state, and local air pollution control laws and regulations. The Trust must ensure that activities within its administrative jurisdiction meet existing laws and regulations, and that external sources of air pollution are controlled or mitigated to the extent possible to protect the air quality and resource values.

Federal actions that cause emissions of nonattainment pollutants are required to complete a formal conformity determination when total direct and indirect emissions caused by the action exceed specified thresholds (40 CFR 51.853). The conformity analysis evaluates whether a proposed action conforms to the State Implementation Plan (SIP) for a particular pollutant. The general conformity rule applies to any federal action in the Bay Area causing more than 100 tons per year ROG, NO_x, or CO. The analysis considers only those emissions that are reasonably foreseeable and that the Trust can practicably control through a continuing program responsibility (40 CFR 51.852).

Because the PTMP would allow future activities that could result in indirect emissions, the Trust would maintain an ability to control certain future

emissions through oversight activities (e.g., requiring emissions control during construction or demolition through contract terms, limiting other new sources through long-term lease agreements). Emissions that are not fully caused by the PTMP would not be within the control of the Trust, and are not included in the conformity analysis (Federal Register 1993).

At this time, none of the future emissions associated with implementation of the programmatic PTMP meet the dual criteria of being reasonably foreseeable and within the control of the Trust. Within any alternative, emissions related to demolition or construction activities associated with any of the alternatives could occur on varying schedules and at varying levels of intensity throughout the life of the plan. Because the scheduling and phasing of demolition or construction activities are not known, quantification of these emissions would be speculative.

However, based on the scale of the proposed demolition and construction activities, it is highly unlikely that the 100-ton threshold would be exceeded by construction activities during any single year of the phased build-out. Future stationary and area sources that could be associated with the proposed uses in some alternatives would, in general, not be likely to cause substantial emissions (examples of these sources would be heating facilities for housing, office space, visitor services, and cultural/educational uses and landscaping equipment). Furthermore, stationary sources would be subject to the permitting regulations and requirements of the Bay Area Air Quality Management District (BAAQMD), and as such, would be exempt from the conformity analysis. Because emissions from mobile sources and motor vehicle trips associated with some alternatives would be affected by regional accessibility, ultimate trip origins or destinations, and other factors, they are not fully caused by the PTMP, and would not be within the continuing control of the Trust. As a result, they are not included in the general conformity analysis.

Noise Control Act

The federal Noise Control Act of 1972 requires compliance with state and local requirements respecting control and abatement of environmental noise and provision of an environment free from noise that jeopardizes health or welfare. Federal management of highway noise is subject to Federal Highway Administration (FHWA) regulations. Federal or federally aided highway

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projects, and construction of highway projects, must conform with the FHWA noise standards.

Current Trust practice responds to existing excessive noise conditions when appropriate. During construction, contractors and other equipment operators would be required to comply with the San Francisco Noise Ordinance. To protect new development from unacceptable exterior noise environments, new multifamily residential units (lodging, apartments, or other attached dwellings) within the Presidio would be constructed according to standards equivalent to Title 24 of the California Code of Regulations. Implementation of these standards would provide suitable insulation to protect dwelling interiors from excessive exterior noise.

Clean Water Act

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) are responsible for ensuring implementation and compliance with the provisions of the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act. Along with the SWRCB and RWQCB, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

A Section 401 CWA Water Quality Certification or waiver from the RWQCB is required before a Section 404 permit becomes valid. [An analysis of CWA Section 404 compliance is provided in the discussion under Executive Order 11990 (Protection of Wetlands), above.]

The Presidio is obtaining its National Pollutant Discharge Elimination System (NPDES) permit, and meanwhile adheres to its existing Stormwater Management Plan (1994), which was designed and written to follow NPDES requirements. The goal of the program is to enhance the quality of storm water discharging to Crissy Field Marsh, San Francisco Bay, or the Pacific Ocean. Additionally, the Trust is planning upgrades to the storm water collection system in the Main Post Planning District. These upgrades will include the upgrade to the inlet grates and replacement of crushed pipe segments. These repairs will help prevent system blockages and conveyance of storm water from this area.

In accordance with the NPDES program, new site development activities would be required to implement a Stormwater Pollution Prevention Plan (SWPP) that prescribes Best Management Practices (BMPs) to control erosion and runoff during construction and operation. Ongoing erosion and pollutant control measures would be incorporated into "as-built" plans outlining maintenance schedules for sediment control. The Trust would require park tenants and contractors to apply BMPs to their facilities and operations. Therefore, the proposed action would be consistent with CWA requirements pertaining to storm water management.

Coastal Zone Management Act and Estuary Protection Act

The Coastal Zone Management Act of 1972 addresses actions affecting coastal zones and requires that federal actions be consistent with state coastal zone management plans. Lands held in the public trust are subject to these requirements. Federal actions must be consistent with the California Coastal Act and Local Coastal Plan. The Estuary Protection Act requires federal agencies, in planning for the use of development of water and related land resources, to give consideration to estuaries and their natural resources.

Bay Conservation and Development Commission (BCDC)

The Trust met with BCDC staff in November 2001 and February 2002 to review their concerns regarding Trust programs and activities that could affect the coastal zone management program, and to be apprised of a proposed amendment of the Bay Plan recreation findings and policies pertaining to decommissioned military base lands (including the Presidio) along the Bay shoreline. It is the Trust's intent to comply with and conduct the PTMP in a manner which is consistent with the Bay Plan to the maximum extent practicable. To this end, the Trust prepared the following consistency determination related to the PTMP alternatives. The Commission may review the consistency determination and either concur with or object to it.

The PTMP alternatives, if implemented, would be consistent with the BCDC's coastal management program by increasing open space and recreational opportunities, preserving historic resources, rehabilitating native vegetation and riparian areas, preserving and enhancing Bay views, protecting water quality, establishing a network of trails and bikeways through the Presidio and encouraging public transportation demand management strategies. The PTMP

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alternatives would provide for public access through the Presidio from both surrounding neighborhoods and from areas within the park to the Bay, and protect view and wildlife corridors to the Bay. The limited cultural, educational, recreation and lodging facilities (including museums, restaurants, cafes, and bed and breakfast accommodations) would be viewed as appropriate in the Presidio under the San Francisco Bay Plan, since they are clearly incidental to park use, and would not obstruct public access to or enjoyment of the Bay. Under each of the alternatives, the planning principles and planning guidelines in the PTMP would promote the design of such facilities such that they would not result in visual or physical barriers to the Bay, in adverse impacts on sensitive Bay-related habitats or species, or on recreational uses of the Bay shoreline. In addition, the PTMP's commitment to improve the long-term health and quality of Crissy Marsh through appropriate alternatives, including expansion, would provide substantial public benefits. Finally, restoration of Tennessee Hollow, a proposed project under PTMP, would increase fresh water inflows to help support a variety of aquatic life and wildlife in and around Crissy Marsh and the Bay.

Endangered Species Act

Section 7 of the Federal Endangered Species Act (FESA) of 1973 directs all federal agencies to further the purposes of the Act. Federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. While Section 7, and the prohibition against Federal actions jeopardizing endangered species, reduce the chances of extinction, the Trust has an affirmative conservation obligation given the preeminent role of endangered species recovery as a central goal of the ESA. It should be noted that the 1988 amendments to ESA stressed the primacy of the ecosystems on which endangered species depend. The Presidio provides a variety of habitats which support federally listed species which are protected pursuant to the ESA. Implementation of the PTMP may result in adverse effects to these species. Section 7 consultation with the USFWS was initiated and a Biological Assessment was submitted to the USFWS on November 26, 2001. The USFWS' regulations require that a Biological Opinion be issued within 135 days which would have been April 21, 2002. The Trust is currently awaiting response from the USFWS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 makes it unlawful to "take" (i.e., kill, harm, or harass) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. The Migratory Bird Executive Order of January 11, 2001, directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act, and defines the responsibilities of each federal agency taking actions that have, or are likely to make, a measurable affect on migratory bird populations. All project actions within the Presidio must comply with this act; therefore, they cannot result in unauthorized take of migratory birds. The PTMP, in combination with mitigation measures identified in this Draft EIS, would require preconstruction surveys during the nesting season, would prohibit disturbance of active nests, and would ensure that protected bird species that are nesting would not be destroyed or disturbed by clearing, demolition, or construction activities.

National Historic Preservation Act

Section 106 of the NHPA requires that a federal undertaking that could affect a property listed on the National Register of Historic Places or eligible for listing on the register be evaluated, with the participation of preservation agencies and the public. This law requires the agency responsible for the proposed undertaking to take historic properties into account, but it does not prohibit the agency from damaging or destroying the resources. All demolition and construction would be conducted in accordance with Section 106.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 defines archaeological resources; requires federal permits for excavation; provides for curation of materials, records, and other data; provides for confidentiality of archaeological site locations; and, in the 1988 amendment, requires the inventorying of public lands for archaeological resources. In addition, Section 110 of the NHPA specifies that archaeological resources must be taken into consideration before implementing any federal action.

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Direct effects on archaeological resources would be avoided to the extent possible through consultation between the project managers and the Trust's archaeological staff. If significant archaeological sites could not be avoided, a decision would be made to abandon or redesign the proposed project to protect the archaeological site, proceed with the project under the terms of Stipulation XIII (Archaeology) of the Programmatic Agreement (see Appendix D), or to consult with the state historic preservation officer to develop mitigating measures such as data recovery through archaeological excavation and recordation of sites. If previously unknown resources were discovered during construction subsequent to inventory efforts using best available technology, the Trust would comply with applicable provisions of the Programmatic Agreement (Appendix D at Stipulation XIV, Discoveries).

No archaeological resources would be excavated without proper permits. Unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources would be prohibited. All archaeological site data would remain confidential.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1979 (PL 95-341) directs that Native American groups who might use or have direct or indirect interest in the Presidio be invited to participate in the planning process. In addition, Section 103(c)(6) of the Trust Act requires the Trust Board to provide opportunities for public comment regarding planning issues. Copies of this DEIS have been sent to the Native American Heritage Commission and 8 American Indian tribes.

Native American Graves Protection And Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 104 Stat. 3049) as amended, outlines the federal government's responsibility for the treatment and ultimate disposition of human burials and grave-related materials. The Act requires consultation with certain Native American communities if circumstances regarding human remains, associated artifacts, or objects of cultural patrimony arise.

Comprehensive Environmental Response, Compensation and Liability Act

The Trust's environmental cleanup responsibilities for the Presidio are set forth in the "Memorandum of Agreement Regarding Environmental Remediation at the Presidio of San Francisco" among the U.S. Army, NPS, and the Trust ("the Presidio MOA"), and the related "Memorandum of Agreement for Environmental Remediation of Presidio of San Francisco" between the Trust and NPS ("Area A MOA"). The Trust's cleanup of nonpetroleum substances, pollutants, and contaminants on the Presidio is addressed through environmental data collection, analyses, remedial design and implementation, and reporting and documentation requirements, separate from the PTMP EIS. The data collection, analyses, and cleanup efforts are being managed in accordance with federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and through regulations set forth in Title 40 of the Code of Federal Regulations (CFR). Cleanup of petroleum contamination is governed by Title 23 of the California Code of Regulations, California Health and Safety Code Chapters 6.5 and 6.8, and the National Oil and Hazardous Substances Contingency Plan (Title 40 CFR, Part 300). The overall cleanup of the Presidio is regulated by the State of California and the U.S. Environmental Protection Agency (EPA). Within the State, the California EPA (Cal-EPA) Department of Toxic Substances Control (DTSC) has oversight authority and jurisdiction over the non-petroleum CERCLA sites and locations subject to Health and Safety Code requirements. DTSC consults with EPA as necessary. The Cal-EPA Regional Water Quality Control Board is the lead on the cleanup of petroleum-contaminated sites.

Solid Waste Disposal Act

Under the Solid Waste Disposal Act, a federal agency disposing of waste at a permitted waste disposal sites must comply with all appropriate state and local laws. The Trust handles solid waste disposal through contracts with private haulers. Solid waste generated at the Presidio is disposed of in Contra Costa County waste disposal. The California Integrated Waste Management Act of 1989 requires cities and counties to divert solid waste from the waste stream, which can be achieved through a reduction in materials use, reuse, and recycling. Please see the discussion under Executive Order 13101 (Waste Reduction) for additional information.

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Others

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Rick Foster, Transportation Planner
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United States Park Police San Francisco Field Office

Captain Noel Inzerille, Commander
Captain Robert Kass, Assistant Commander for Administration
Major Gretchen Merkle, Assistant Commander for Operations
Lieutenant Christine Hodakievic, Administrative Lieutenant
Captain Robert Kass, Assistant Commander for Administration

Presidio Fire Department

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Assistant Fire Chief Curtis Troutt
Assistant Fire Chief Bill Delaplaine

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Juan Miller, Account Services, Pacific Gas and Electric
Robert Pallone, Education Specialist, United States Department of Education
Laura Castellini, San Francisco State University Student

5.6 AGENCIES AND ORGANIZATIONS TO WHOM COPIES OF THE DRAFT EIS WERE SENT

Federal Agencies

Department of the Army, Corps of Engineers
Department of Energy, Oakland Office
Department of Commerce
National Marine Fisheries Service-Southwest Region
Department of the Interior, Office of Environmental Policy and Compliance
U.S. Fish and Wildlife Service
National Park Service, Pacific West Region
Environmental Protection Agency-Region Nine

CONSULTATION AND COORDINATION

Department of Transportation
Federal Highway Administration, California Division Office
Federal Transit Administration, Region Nine

Federal Advisory Groups

Advisory Council on Historic Preservation
Golden Gate National Recreation Area Citizens Advisory Committee

State Agencies

California Coastal Commission
California Highway Patrol
Caltrans, District 4, Office of Transportation Planning
Department of Conservation
Department of Fish and Game, Region 3
Department of Parks and Recreation
Department of Toxic Substances Control
Native American Heritage Commission
Office of Historic Preservation
Office of Planning and Research
Regional Water Quality Control Board, Region 2
Resources Agency
State Clearinghouse
State Lands Commission

Regional, County, and Municipal Agencies

Bay Area Air Quality Management District
City and County of San Francisco
Golden Gate Bridge, Highway and Transportation District
Metropolitan Transportation Commission
Public Utilities Commission
San Francisco Municipal Railway
San Francisco County Transportation Authority
San Francisco Unified School District

American Indian Tribes

Amah Band of Ohlone/Costanoan Indians
Costanoan Band of Carmel Mission Indians
Costanoan Ohlone Rumsen-Mutsun Tribe
Costanoan-Rumsen Carmel Tribe
Federated Coast Miwok
Indian Canyon Band of Costanoan/Mutsun
Muwekma Indian Tribe
The Ohlone Indian Tribe

Libraries

Marin Community Library
San Francisco Main Library
San Francisco Presidio Branch Library
San Francisco State University Library

Organizations

American Institute of Architects, San Francisco Chapter
American Planning Association, Northern California Chapter
American Society of Landscape Architects, San Francisco Chapter
Audubon Society, Golden Gate Chapter
California Historical Society
California Native Plant Society, Bay Chapter
California Heritage Council
Center for Citizen Initiatives
Council on America's Military Past – U.S.A.
Cow Hollow Association
Cow Hollow Neighbors in Action
Exploratorium
Fort Mason Foundation
Food, Land & People
Fort Point and Presidio Historical Association
Golden Gate National Parks Association
Interfaith Center at the Presidio
Lake Street Residents Association
League of Women Voters, San Francisco

CONSULTATION AND COORDINATION

Marina – Cow Hollow Neighbors and Merchants
National Parks Conservation Association
Natural Resources Defense Council
National Japanese American Historical Society
Neighborhood Association for Presidio Planning (NAPP)
Pacific Heights Residents Association
Pedal Power
People for the Presidio
Planning Association for the Richmond
Presidio Alliance
Presidio Challenge
Presidio Heights Association of Neighbors (PHAN)
Presidio Nonprofits Association
Presidio Performing Arts Foundation
Presidio Tenants Council
Residential Mayors
San Francisco Beautiful
San Francisco Bicycle Association
San Francisco Bicycle Advisory Committee

San Francisco Chamber of Commerce
San Francisco League of Conservation Voters
San Francisco Planning and Urban Research Association (SPUR)
San Francisco State University History Department
San Francisco Tomorrow
San Francisco Waldorf School
Sierra Club Presidio Committee
State of the World Forum
Swords to Plowshares Veterans' Academy
Tenants Council Steering Committee
Tenderloin Neighborhood Development Corporation
Transit First Market Street Alliance
Treasure Island Museum
University of California San Francisco (UCSF) Campus Planning
University of San Francisco (USF)
Urban Watershed Project
Wally Byam Caravan Club International (Northern California Unit)
Wilderness Society
World Jurist Association

CONSULTATION AND COORDINATION

REFERENCES

REFERENCES

6. REFERENCES

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ACRONYMS

7. LIST OF ACRONYMS

ABAG	Association of Bay Area Governments	cf	cubic feet
ACHP	Advisory Council on Historic Preservation	CFR	Code of Federal Regulations
AMA	Archaeological Management Assessment	cfs	cubic feet per second
ANSI	American National Standards Institute	CIWMB	California Integrated Waste Management Board
APE	Area of Potential Effects	CMP	comprehensive management program
ARG	Architectural Resources Group	CNPS	California Native Plant Society
ARPA	Archaeological Resources Protection Act	CO	carbon monoxide
BAAQMD	Bay Area Air Quality Management District	CSO	combined sewer overflow
BAE	Bay Area Economics	CTA	San Francisco County Transportation Authority
BCDC	Bay Conservation and Development Commission	CWA	Clean Water Act
BMPs	Best Management Practices	dB	decibel
BTU	British thermal units	dBA	A-weighted decibel
CAA	Clean Air Act	DHS	Department of Health Services
Caltrans	California Department of Transportation	DOE	Department of Energy
CAP	Clean Air Plan	DOI	Department of the Interior
CARB	California Air Resources Board	DOT	Department of Transportation
CCR	California Code of Regulations	DPH	Department of Public Health
CCSF	City and County of San Francisco	DTSC	Department of Toxic Substances Control
CDFG	California Department of Fish and Game	EA	Environmental Assessment
CEPPC	California Exotic Pest Plant Council	EIS	Environmental Impact Statement
CEQ	Council on Environmental Quality	EO	Executive Order
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	EPA	U.S. Environmental Protection Agency
CESA	California Endangered Species Act	ESF	Environmental Screening Form
		FEIS	Final Environmental Impact Statement

LIST OF ACRONYMS

FESA	Federal Endangered Species Act	LAIR	Letterman Army Institute of Research
FHWA	Federal Highway Administration	LAMC	Letterman Army Medical Center
FSC	Federal Species of Concern	LDAC	Letterman Digital Arts Center
FTE	full-time equivalent	L_{dn}	24-hour average noise
FY	fiscal year	LEED	Leadership in Environmentally Efficient Design
GAO	General Accounting Office	L_{eq}	equivalent energy indicator
GGBHTD	Golden Gate Bridge Highway and Transportation District	LOS	Level of Service
GGNPA	Golden Gate National Parks Association	mgd	million gallons per day
GGNRA	Golden Gate National Recreation Area	ml	millimeter
GGT	Golden Gate Transit	MMBTU	million British thermal units
GMP	General Management Plan	MTC	Metropolitan Transportation Commission
GMPA	General Management Plan Amendment	MUNI	San Francisco Municipal Railway
gpd	gallons of water per day	MW	megawatt
gpm	gallons per minute	n.d.	no date
GSA	General Services Administration	NAC	Noise Abatement Criteria
gsf	gross square feet	NAGPRA	Native American Graves Protection and Repatriation Act
HABS	Historic American Building Survey Report	NAPP	Neighborhood Associations for Presidio Planning
HASR	Historic Architectural Survey	NEPA	National Environmental Policy Act
HCM	Highway Capacity Manual	NHL	National Historic Landmark
HIA	Housing Impact Area	NHLD	National Historic Landmark District
HV	High Voltage	NHPA	National Historic Preservation Act
ICAP	Inventory/Condition Assessment Program	NMFS	National Marine Fisheries Service
IPM	Integrated Pest Management	NO_2	nitrogen dioxide
JKP	Julius Kahn Playground	NO_x	nitrogen oxides
kV	kilovolt, 1,000 volts	NPDES	National Pollutant Discharge Elimination System
kVA	kilovolt amps, 1,000 volt amp	NPS	National Park Service

LIST OF ACRONYMS

NRHP	National Register of Historic Places	SFFO	San Francisco Field Office
PA	Programmatic Agreement	SFPD	San Francisco Police Department
PG&E	Pacific Gas and Electric	SFUSD	San Francisco Unified School District
PHSH	Public Health Services Hospital	SHPO	State Historic Preservation Officer
PM ₁₀	particulate matter	SIP	State Implementation Plan
PM _{2.5}	fine particulate matter	SO ₂	sulfur dioxide
ppb	parts per billion	SRO	single room occupancy
ppm	parts per million by volume	SWAT	special weapons and tactics
PSR	project study report	SWPPP	Storm Water Pollution Prevention Plan
PTMP	Presidio Trust Management Plan	TAZ	Transportation Analysis Zone
PWTP	Presidio Water Treatment Plant	TCM	transportation control measure
PX	Post Exchange	TDM	Transportation Demand Management
RCP	reinforced concrete pipe	UCB	University of California, Berkeley
RCRA	Resource Conservation and Recovery Act	UCSF	University of California at San Francisco
RFP	Request for Proposals	USACE	U.S. Army Corps of Engineers
RFQ	Request for Qualifications	USDA	U.S. Department of Agriculture
ROD	Record of Decision	USFWS	U.S. Fish and Wildlife Service
ROG	Reactive Organic Gases	USPP	U.S. Park Police
RWQCB	Regional Water Quality Control Board	VMP	Vegetation Management Plan
RWS	Reclaimed Water System	Φg/m ³	micrograms per cubic meter
SamTrans	San Mateo Transit		
SEWPCP	Southeast Water Pollution Control Plant		
sf	square feet		
SFCTA	San Francisco County Transportation Authority		
SFDPT	San Francisco Department of Parking and Traffic		
SFFD	San Francisco Fire Department		

LIST OF ACRONYMS

GLOSSARY

GLOSSARY

8. GLOSSARY

Adverse Effect - Harm to historic properties, directly or indirectly caused by a federal agency's action. The regulations set forth criteria of effect and adverse effect at 36 CFR § 800.9.

Air Pollutant - Any foreign or natural substance that is discharged, released or over-generated into the atmosphere that could result in adverse effects on humans, animal, vegetation or materials. Also known as an air contaminant. Examples include but are not limited to, smoke, charred paper, dust soot, grime, carbon, fumes, gases, odors, particulate matter, acids or any combination thereof.

Air Quality Management District - Local agency charged with controlling air pollution and attaining air quality standards. The Presidio is included in the Bay Area Air Quality Management District.

Ambient Air Quality Standard – Health- and welfare-based standards established by the state or federal government for clean outdoor air that identify the maximum acceptable average concentrations of air pollutants during a specified period of time.

Ambient Noise – The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term “ambient” is used to describe an existing or pre-project condition such as the setting in an environment noise study.

Ambient Noise Level - The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

Archaeological Resources - The physical remains of past human activity, including evidences of such activity on the environment.

Area A - The predominately coastal area of the Presidio under the jurisdiction and management of the National Park Service.

Area B – The area of the Presidio under the administrative jurisdiction of the Trust. Area B is defined in Title I of the Trust Act and includes the interior (non-coastal) portion of the Presidio and nearly all built areas of the park.

Area of Potential Effects - The geographic area or areas within which an undertaking could cause changes in the character or use of historic properties, if any such properties exist there. This area always includes the actual site of the undertaking, and could also include other areas where the undertaking will cause changes in land use, traffic patterns, or other aspects that could affect historic properties.

Asbestos - A noncombustible, nonconducting, and chemically resistant mineral. Friable (easily crushed) asbestos, such as that contained in certain types of blown-on insulation or ceiling tiles, that is damaged, deteriorated, or easily accessible, represents a potential threat to human health.

Attainment - Achievement of air quality standards.

Best Management Practice (BMP) - Schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce water pollution. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, waste disposal or drainage from raw material storage.

Building Height - The vertical distance between finished grade and the top of a building. Building top is defined as the top of the finished roof in the case of a flat roof, and the average height of the rise in the case of the pitched or stepped roof. On a sloping site, this measurement is taken at the median grade height for each building face. Total building height is calculated by determining the average height of all individual building faces.

Carbon Monoxide (CO) - A colorless, odorless toxic gas produced by the incomplete combustion of carbon containing substances. It is emitted in large quantities in the exhaust of gasoline-powered vehicles.

Capital Costs (also Capital Improvements) – Monies spent to rehabilitate, upgrade, or newly construct the built and natural environments, including residential and non-residential buildings, interior improvements, roads, utility systems, water and sewer systems, electrical and telecommunications systems, forests, and open spaces, among other items. Capital costs do not include operating expenses.

GLOSSARY

Capital Replacement Reserves (also Capital Replacement Set-Asides) – Monies set aside into a reserve account to assure that funds are available to replace any and all capital improvements in Area B, such as components of buildings or entire buildings, and park infrastructure including roads, grounds, natural areas, and utilities.

CNEL – Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 – 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Conformity - A process mandated in the federal Clean Air Act to insure that federal actions do not impede attainment of the federal health standards. General conformity sets out a process that requires federal agencies to demonstrate that their actions are neutral or beneficial to air quality.

Contingency Plan - A plan that is developed to provide a decision framework to address the potential for unidentified contamination discovered during construction activities. The plan allows for the management of contaminants in a timely manner that is protective of human health and the environment.

Construction Site - The location of construction activity.

Cooperating Agency - A federal agency, other than the one preparing the NEPA document (the lead agency), that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. Under some circumstances, state or local governments and/or Indian tribes may be designated cooperating agencies.

Criteria Air Pollutants - Air pollutants for which the federal or state government has established ambient air quality standards or criteria for outdoor concentration in order to protect public health.

Cultural Landscape - The organization and interrelationships of the natural and designed features of a site by use reflecting cultural values and tradition, and changes to those features over time. At the Presidio, this character is inextricably linked to its continuous military occupation since 1776.

Cultural Resources - An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource can be a tangible entity or a cultural practice. Tangible entities at the Presidio include archaeological resources, cultural landscapes and historic structures.

Cumulative Effects - Effects that are a result of incremental impacts of an action, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions.

dB or dBA - A decibel is the standard unit of sound amplitude, or loudness; decibels are measured on a logarithmic (i.e., non-linear) scale. The A-weighted scale is adjusted for human sensitivity. For decibels, each increase in 10 dB multiplies the previous value by 10; for example, 50 dBA is 10 times louder than 40 dBA, while 60 dBA is 100 times louder than 40 dBA.

Deconstruction - The dismantling of a structure in a fashion that maximizes the recovery of materials and recycling.

Direct Effect - An impact that occurs as a result of the proposed action or alternative in the same place and at the same time as the action.

Endangered Species - Any species that is in danger of extinction throughout all or a significant portion of its range.

Environmental Impact Statement (EIS) - A detailed NEPA document prepared when a proposed action or alternatives have the potential for significant impact on the human environment.

Environmental Justice - The fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies.

Environmental Screening Process - The analysis that precedes a determination of the appropriate level of NEPA documentation.

Exceedance - A monitored level of concentration of any air contaminant higher than national or state ambient air quality standards.

GLOSSARY

Financial Management Program - A long-range projection required to be submitted to Congress based on the direction of the Trust Act setting forth an annual schedule of decreasing federal funding that will achieve self-sufficiency for the Trust by 2013.

Financial Sustainability – The long-term aspect of financial self-sufficiency. The premise that the Presidio must not only meet short-term self-sufficiency requirements in fiscal year 2013, but also be capable of sustaining its operations, performing the necessary building- and infrastructure-related capital improvements, and funding replacement reserves in perpetuity. This requires generating sufficient revenues from leasing and other activities to cover these long-term costs.

Financing Costs – The Trust has the authority to borrow \$50 million from the U.S. Treasury. The costs associated with repayment of this loan (both principal and interest) are referred to as financing costs. For a full description of the terms of the U.S. Treasury loan, see the PTIP Financial Model Assumptions and Documentation binder at the Trust's business office.

Fire Flows - Water flows available for fighting fires. Fire flows at the Presidio can be deficient due to undersized water mains, bottlenecks created by pressure release valves or water meters, unusable piping or spacing of fire hydrants farther apart than permitted by the Uniform Fire Code.

Fugitive Dust - Dust particles that are introduced into the air through certain activities such, as excavation and site preparation during construction or some demolition activities, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

General Management Plan Amendment (GMPA) - Developed through a four-year public planning process and adopted by the NPS in 1994, the plan outlines the vision and land uses for the Presidio as a national park in an urban area.

General Objectives of the GMPA - A directive of Congress incorporated into the Trust Act with which the Trust must comply. Because the GMPA text does not explicitly identify general objectives, the Trust Board determined and adopted the General Objectives of the GMPA in Trust Board Resolution 99-11. The General Objectives of the GMPA guide Trust policy and

decisions about resource protection and land and building use in Area B of the Presidio.

Greensward - A linear landscape element consisting primarily of lawn and planted trees which serves as an open space in a built-up or urban setting.

Ground Lease - The right to use a land parcel for a definite length of time by a tenant who invests the necessary capital to develop and construct improvements (e.g., buildings) on the site.

Ground Rent - The rent paid for the use of land under the terms of a ground lease.

Groundwater - Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

Guaranteed-Ride-Home Program - A program that assures an employee not arriving in his or her personal vehicle of a trip home. For example, an employee may have to work later than the departure time of his carpool or the last bus to his destination. The program would then provide the employee with a ride home in a company vehicle, subsidized taxicab or similar type vehicle.

Hazardous - Substances that are potentially harmful to human health or the environment.

Hazardous Wastes - A compound or compounds remaining for disposal or reclamation after use or after release to the environment.

Heritage Landmark Trees - Trees that have historic value, are outstanding botanical specimens, display unique traits, or serve a particular aesthetic function in the landscape.

Historic Designed Landscape - One that is consciously designed by a landscape architect-master gardener, architect or horticulturist according to established design principles.

Historic Views - Those views and view corridors which existed at the Presidio during its period of significance.

GLOSSARY

Historic Property - Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. The term includes artifacts, records, and remains that are related to and located in such properties. The term “eligible for inclusion in the National Register” includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria.

Impact Topics - Specific natural, cultural or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration and timing of the effect to each of these resources is evaluated in the Environmental Consequences section of an EIS.

Implementation Phase – The implementation phase is complete the year after all capital improvements are completed and capital reserves have been fully funded.

Indirect Effect or Impact - Reasonably foreseeable impacts removed in time or place from the proposed action. These are “downstream” impacts, future impacts, or the impacts of reasonably expected connected actions (i.e., growth of an area after a highway to it is complete).

Infill Construction – New construction that is located within an existing developed area, such as a building complex. Infill construction refers to new development within developable areas.

Integrated Pest Management - The coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property and the environment.

Issues - In NEPA, issues are environmental problems that could occur if the alternative (including no action) is implemented or continues to be implemented.

Landfill - A waste management unit at which waste is discharged in or on land for disposal.

Landscape Vegetation - Plant material, usually ornamental trees, shrubs, grass and plants growing around buildings or grounds that has been planted to beautify the site or for a utilitarian purpose such as screening a view.

L_{dn} - A day-night average noise level, a 24-hour average L_{eq} ; it takes into account the greater annoyance of nighttime noise with a 10 dBA “penalty” added during the hours of 10:00 p.m. to 7:00 a.m.

Lead Agency - The agency either preparing or taking primary responsibility for preparing the NEPA document.

L_{eq} - The equivalent steady-state sound level is the average acoustic energy content of noise for a stated period of time. The L_{eq} of two different time-varying noise events are the same if the events deliver the same acoustic energy to the ear during exposure, no matter what time of the day or night they occur, unlike some other measurements that adjust for differences in noise sensitivity at night.

Letterman Complex - The 60-acre geographic area near the Lombard Street Gate in the Presidio that consists of approximately 50 buildings including the Letterman Army Medical Center, the Letterman Army Institute of Research, and the Thoreau Center for Sustainability.

Mitigation - A modification of the proposal or alternative that lessens the intensity of its impact on a particular resource.

National Environmental Policy Act (NEPA) – Federal legislation that establishes environmental policy for the nation. It provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains “action forcing” procedures to ensure that federal agency decision-makers take environmental factors into account.

National Historic Landmark (NHL) - These historic properties are designated by the Secretary of the Interior as having special importance in the interpretation and appreciation of the nation’s history. Section 800.10 of the Advisory Council on Historic Preservation regulations specify some special protections for NHLs under the Section 106 review process.

GLOSSARY

National Historic Preservation Act (NHPA) - The basic legislation of the national historic preservation program that established the Advisory Council on Historic Preservation and the Section 106 review process.

Native Plant Communities - A group of plants growing together that are composed primarily of native plants and that were most likely found on that particular site prior to European settlement.

NEPA Process - The objective analysis of an action to determine the degree of its environmental impact on the natural and physical environment; alternatives and mitigation that reduce that impact; and *full* and candid presentation of the analysis to, and involvement of, the interested and affected public. NEPA process may also be referred to generally as environmental review.

Nitrogen Oxides (NO_x) - Gases formed in great part from atmospheric nitrogen and oxygen and oxygen when combustion takes place under conditions of high temperature and high pressure; NO_x is a criteria air pollutant.

No Action alternative - Under NEPA, an alternative that provides a benchmark for comparison, enabling decision-makers to compare the magnitude of the environmental effects of the various alternatives. In the case of the PTIP, the no action alternative is the GMPA 2000 alternative, which reflects what would happen if no action were taken to update the existing plan for the Presidio.

Noise – Unwanted sound.

Nonnative Plants - Plant species that have been introduced (or have invaded through natural dispersal from a site where they were introduced) and did not occur on that site prior to European settlement. Even though a plant grows as a native species in a nearby location, if habitat for that species does not occur on the site and if it did not occur there as part of a native plant community, it is considered to be non-native. (For example, coast redwood occurs naturally within the Bay Area, but it is considered non-native to the Presidio.)

Period of Significance - A defined period of time during which a property established its historical association, meaning, or value.

Person Trip - A trip to or from the project made by one person in any mode of transportation: automobile, bus, transit, walking or bicycle.

Predicted Noise Level(s) - Future noise levels, resulting from predictable natural and mechanical sources and human activity including the project.

Presidio Trust - A federal government corporation established by Congress through enactment of the Trust Act (P.L. 104-333). The Trust has two fundamental missions: preserve and enhance the Presidio, as part of the national park system and achieve financial self-sufficiency by 2013.

Program Expenses – On-going annual operating expenses associated with delivering public programs, such as interpretive programs; museums and institutes; exhibitions, events and cultural programs; and community stewardship and resource education programs.

Programmatic Agreement - An agreement with historic preservation oversight agencies, the implementation of which satisfies the implementing agency's obligations under Section 106 and 110(f) of the National Historic Preservation Act to protect a National Historic Landmark.

Proposed Action - The alternative that the Lead Agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors.

Receptors - Locations selected for determining noise or air quality impacts. These locations represent areas where frequent human use occurs, or is likely to occur in the foreseeable future.

Replacement Construction - Construction of new buildings that are intended to replace specific buildings that have been identified for demolition.

Revenues – The total income produced or generated by a given source. At the Presidio, these revenue sources include non-residential and residential buildings (building leases and ground leases), government appropriations, Treasury borrowing, utilities and telecommunications provision, parking provision, permit and salvage operations, special events, and other miscellaneous parkwide revenues.

GLOSSARY

Scope - The types of actions to be included in a project, the range of alternatives, and the impacts to be considered.

Scoping - Internal decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, etc. External scoping is the early involvement of the interested and affected public.

Section 7 - The section of the Endangered Species Act that outlines procedures for interagency cooperation to conserve federally listed species and designated critical habitats.

Section 106 - The section of the NHPA that requires federal agencies to consider the effects of their actions on historic properties and seek comments from an independent reviewing agency, the Advisory Council on Historic Preservation. The purpose of Section 106 is to avoid unnecessary harm to historic properties.

Section 110 - The section of the NHPA that sets out the broad historic preservation responsibilities of federal agencies to ensure historic preservation is fully integrated into ongoing programs.

Self-Sufficiency - The requirement, mandated by the U.S. Congress, that the Trust generate sufficient revenues at the Presidio to support Area B operations without continuing federal appropriations, beginning in Fiscal Year 2013 and every year thereafter. Self-sufficiency has both a short-term and long-term aspect. See also Financial Sustainability.

Significant - A subjective interpretation of the intensity of impact, in several contexts, of the proposed action or alternatives.

Solid Waste - Any non-hazardous garbage, refuse or sludge, which is primarily solid, but could also include portions of liquid, semi-solid or contained gaseous material resulting from residential, industrial, commercial, agricultural, mining operations, and community activities.

Special-Status Species - Plants and animals with limited numbers or distribution that have special legal and policy protection. They are protected

under federal and state Endangered Species Acts or other regulation, or are sufficiently rare to either be candidates or under consideration for such designation.

State Historic Preservation Officer - The official in each state who (among other duties) consults with federal agencies during Section 106 review. The SHPO administers the national historic preservation program at the state level, reviews National Register nominations, and maintains file data on historic properties that have been identified but not yet nominated. Agencies seek the views of the appropriate SHPO(s) while identifying historic properties and assessing effects of an undertaking on historic properties

State Implementation Plan - EPA-approved state plans for attaining and maintaining federal air quality standards.

Storm Water - Storm water runoff and surface runoff and drainage.

Storm Water Pollution Prevention Plan - Developed and implemented to address specific storm water discharge concerns for construction sites.

Streetscape - The characteristics and components that give identity to a particular street. This includes the street itself, the buildings that border it, its sidewalks, street trees, and site furniture.

Surface Water - Freshwater rivers, streams and lakes.

Sustainability - An activity that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Design - An alternative approach to traditional design that does not require a loss in the quality of life, but require a change in mind-set and a change in values toward less consumptive lifestyles. These changes embrace global interdependence, environmental stewardship, social responsibility and economic viability. Sustainable design recognizes the impacts of every design choice on the natural and cultural resources of the local, regional and global environments.

GLOSSARY

Threshold of Hearing – The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.

Tiering - The coverage of general matters in broad environmental impact statements with subsequent statements incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

Toxic Air Contaminant (TAC) - An air pollutant, identified in regulation by the California Air Resources Board, that could cause or contribute to an increase in deaths or in serious illness, or could pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code Section 39650 et seq.) from pollutants subject to California Ambient Air Quality Standards. Health effects due to TACs can occur at extremely low levels. It is typically difficult to identify levels of exposure that do not produce adverse health effects.

Transportation Demand Management (TDM) - A plan developed, using incentives or disincentives to discourage commuting using single-occupant vehicles, and to encourage travel by some other mode.

Treatment - A physical intervention, or development framework, carried out to achieve a historic preservation goal. Treatment options include preservation, restoration, reconstruction and rehabilitation.

Trust Act - The act that establishes the Trust as a federal government corporation subject to the requirements of the Government Corporation Control Act (P.L. 104-333). The Trust Act authorizes the Trust to manage a majority of the Presidio's land area by transfer of responsibility from the National Park Service in accordance with the purposes set forth in Section One of the Act that established the GGGNRA (P.L. 92-589) and the general objectives of the GMPA.

Undertaking - Under NHPA, a federal activity that is subject to Section 106 requirements. The term is intended to include any project, activity, or program, and any of its elements, that has the potential to have an effect on a historic property and that is under the direct or indirect jurisdiction of a federal agency or its licensed or assisted by a federal agency.

Value-added Reuse – Refers to salvaging materials that will be refined to increase their worth (e.g. wood timbers may be planed and refinished, then crafted into furniture).

Vehicle Trip - A trip to or from the project made by a transportation vehicle, primarily automobile. Equal to the number of person-trips made by automobile divided by the average numbers of persons per automobile.

Viewshed - The geographic area from which a site is visible, a collection of viewpoints.

Visitor Carrying Capacity – The type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions.

Wetlands - Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Windrow (or Windbreak) - A hedgerow or tight planting of trees made in open areas to protect a landscape or building from winds.

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